UNIVERSIDAD COMPLUTENSE DE MADRID
FACULTAD DE CIENCIAS ECONÓMICAS Y EMPRESARIALES

TESIS DOCTORAL

Sustentabilidad y responsabilidad social corporativa como factores de éxito para obtener mejores resultados financieros de operación en diferentes industrias

Sustainability and corporate social responsibility as success factors to improve operational profits on diverse industries

MEMORIA PARA OPTAR AL GRADO DE DOCTOR

PRESENTADA POR

Juan Carlos García-Piña Rosete

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Madrid

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DECLARACIÓN DE AUTORÍA Y ORIGINALIDAD DE LA TESIS PRESENTADA PARA OBTENER EL TÍTULO DE DOCTOR

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RESUMEN[1]

[1] Todas las citas de este capítulo se encuentran en la Bibliografía General después del Capítulo 6

Capítulo 1

Introducción

Resulta imposible exagerar el significado de la afirmación acerca de la importancia de la responsabilidad corporativa, la ética empresarial, el manejo ambiental, el control de contaminantes, y del desarrollo sustentable entre otros (Vogel, 2005). En la actualidad hay dos términos que están de moda, uno es sustentabilidad y el otro es responsabilidad social corporativa.

La Comisión Mundial sobre Medio Ambiente y Desarrollo, en su Informe de 1987, definió la sustentabilidad como "satisfacer las necesidades de la presente (generación) sin comprometer la capacidad de las generaciones futuras para satisfacer las suyas" (Comisión Mundial sobre Medio Ambiente y Desarrollo, 1987). Las Naciones Unidas también han adoptado el mismo significado en su Conferencia de 1992 sobre el Medio Ambiente y el Desarrollo (Naciones Unidas, 1993).

Responsabilidad Social Corporativa es un término relacionado con el comportamiento ético de las corporaciones. Se ha definido como: "el compromiso continuo de las empresas de comportarse de manera ética y contribuir al desarrollo económico al mismo tiempo que mejora la calidad de vida de su fuerza laboral y sus familias, así como de la comunidad y la sociedad en general" (Sims, 2003).

La teoría de las partes interesadas (*Stakeholder Theory*), establece que el cumplimiento de las necesidades de las partes interesadas es vital en términos de sustentabilidad para garantizar el éxito de las empresas (Waddock y Graves, 1997). Esta teoría ha sido considerada como uno de los pilares de la Responsabilidad Social Corporativa para su inclusión en el desempeño operacional.

Margolis & Walsh mencionaron que actualmente existe un gran debate sobre Sustentabilidad y Responsabilidad Social Corporativa (Margolis & Walsh, 2003). La razón para que actualmente no haya acuerdo sobre una definición común para ambos términos es la presencia de evidencia empírica de investigadores que apoyan su implementación y de aquellos que la rechazan. La existencia de resultados mixtos obedece a la gran diversidad de variables disponibles para la investigación dentro de ambos temas.

Esta tesis estudia la relación que existe entre la Sustentabilidad y el comportamiento de la Responsabilidad Social y los márgenes operativos de rentabilidad derivados del manejo de sus respectivos negocios. La presente investigación se basa en el *Dow Jones Sustainability Index* (DJSI) compuesto por las compañías públicas de tres clústeres industriales: manufactura, servicios, automóviles y componentes (S&P Dow Jones, 2016). La razón de esta segmentación es la relación estrecha entre dichas corporaciones, dada su naturaleza involucra relativamente los mismos componentes, como mano de obra, materias primas, distribución, servicio al cliente, entre otros factores.

De acuerdo con el *Dow Jones Sustainability Index*, para que los corporativos sean considerados socialmente responsables, se excluye del índice a las industrias de alcohol, tabaco, armas de fuego, y entretenimiento para adultos lo que les permite ser considerados ambientalmente sustentables, aunque debido a la naturaleza de sus productos se considera que no son aptos para ser socialmente responsables (S&P Dow Jones, 2016).

La presente investigación ha utilizado la base de datos financiera global de Compustat para adquirir los datos relevantes para este estudio; de dicha base de datos se obtuvo la información con respecto a los Códigos de Clasificación Industrial Estándar (SIC) específicos para cada Clúster Industrial.

Posteriormente, en esta tesis, las calificaciones verdes se analizan mediante la comparación de los componentes de *Newsweek Green Rankings* en términos de su relación con el rendimiento de la rentabilidad operativa y el riesgo operacional relacionado con el *Global Fortune 500 Index* (Newsweek, 2014-16).

Capítulo 2

Sostenibilidad y Responsabilidad Social, el efecto en los márgenes de utilidad operativa

El caso de la industria manufacturera

Objetivos

Este capítulo tiene como objetivo determinar el beneficio para una compañía manufacturera de comportarse sustentablemente y seguir altos estándares de responsabilidad social en sus operaciones. La metodología incluye una disección de Compañías Sustentables y Socialmente Responsables (SSRC) y sus contrapartes No-SSRC. El análisis compara la rentabilidad en los cuatro niveles operativos para identificar cuál segmento otorga mejores rendimientos operativos.

Resultados

Las conclusiones que surgen tanto del Marco Teórico como de los resultados de la hipótesis son que el tener un Desempeño Corporativo Sustentable y Socialmente Responsable permite a las empresas tener resultados operativos y estabilidad significativamente mejores.

Capítulo 3

Rentabilidad y rendimiento de las empresas de servicios socialmente responsables

Objetivos

Este capítulo tiene como objetivo determinar el beneficio para una compañía de servicios de comportarse sustentablemente y seguir altos estándares de responsabilidad social en sus operaciones. La metodología incluye una disección de Compañías Sustentables y Socialmente Responsables (SSRC) y sus contrapartes No-SSRC. El análisis compara la rentabilidad en los cuatro niveles operativos para identificar cuál segmento otorga mejores rendimientos operativos. Este artículo utiliza un análisis longitudinal multinivel para comparar los cuatro niveles de rentabilidad operativa.

Resultados

Las conclusiones que surgen tanto del Marco Teórico como de los resultados de la hipótesis son que el tener un Desempeño Corporativo Sustentable y Socialmente Responsable permite a las empresas tener resultados operativos y estabilidad significativamente mejores.

Capítulo 4

Los procesos éticos y su impacto en los márgenes de utilidad en el Clúster Automotriz y Componentes

Objetivos

Este capítulo tiene como objetivo determinar el beneficio para una compañía del clúster automotriz y componentes de comportarse sustentablemente y seguir altos estándares de responsabilidad social en sus operaciones. La metodología incluye una disección de Compañías Sustentables y Socialmente Responsables (SSRC) y sus contrapartes No-SSRC. El análisis compara la rentabilidad en los cuatro niveles operativos para identificar cuál segmento otorga mejores rendimientos operativos. Este artículo utiliza un análisis longitudinal multinivel para comparar los cuatro niveles de rentabilidad operativa.

Resultados

Las conclusiones que surgen tanto del Marco Teórico como de los resultados de la hipótesis son que el tener un Desempeño Corporativo Sustentable y Socialmente Responsable permite a las empresas tener resultados operativos y estabilidad significativamente mejores.

Capítulo 5

Análisis SEM de ecoeficiencia en Compañías del Global Fortune 500

Objetivos

Este capítulo tiene como objetivo determinar la relación entre las calificaciones ecológicas que se consideran necesarias para la ecoeficiencia, con respecto al desempeño operativo y su efecto en el riesgo operativo. La metodología incluye la utilización del *Newsweek Green Rankings Index* con respecto a las empresas que aparecen en el *Global Fortune 500 Index*. El artículo utiliza el Modelo de Ecuaciones Estructurales (SEM), por sus siglas en inglés, para determinar la relación que existe entre el manejo adecuado de variables de ecoeficiencia y el desempeño operativo de las mismas y si coadyuva a evitar o reducir los efectos adversos del riesgo operativo.

Resultados

Las conclusiones que surgen del Marco Teórico son las que indican que su implementación debería proporcionar beneficios para las corporaciones, mientras que los resultados no permiten determinar la relación directa, al menos con los datos proporcionados por Newsweek.

Capítulo 6

Conclusiones

En este capítulo se señalan, principalmente, las conclusiones que surgieron de los tres sectores diferentes y cómo se relacionan entre sí. Al final se discutirán futuras posibilidades de investigación dentro de este campo de estudio.

SUMMARY[2]

[2] All references for this section will be at the General Bibliography Section after Chapter 5.

Chapter 1

Introduction

It is impossible to exaggerate the significance of the contemporary claim that there is a business case for corporate responsibility, business ethics, corporate citizenship, environmental stewardship, pollution control, sustainable development, and the like (Vogel, 2005). At the present time, there are two terms that are in vogue, one is Sustainability, and the other is Corporate Social Responsibility.

The World Commission on Environment and Development, in its 1987 Report, defined Sustainability as "meeting the needs of the present (generation) without compromising the ability of future generations to meet theirs" (The World Commission on Environment and Development, 1987). The United Nations have also adopted the same meaning at its 1992 Conference on the Environment and Development (United Nations, 1993).

Corporate Social Responsibility is a term related to ethical behavior performed by Corporations. It has been defined as: "the continuing commitment by businesses to behave ethically and contributing to economic development while improving the quality of life of their workforce and their families as well as of the community and society at large" (Sims, 2003).

The Stakeholder Theory states that the fulfillment of stakeholders' needs is vital in terms of Sustainability in order to guarantee businesses' success (Waddock & Graves, 1997). This theory has been considered as one of the pillars of Corporate Social Responsibility for its inclusion in their operational performance.

Margolis & Walsh have shown that there is currently a large debate regarding Sustainability and Social Responsibility (Margolis & Walsh, 2003). The reason is that there is currently no agreement upon a common definition for both terms is that there has been empirical evidence from researchers both supporting its implementation and those rejecting it. Such mixed results arise from the situation that there are many variables available for research within both fields

This thesis studies the relationship that exists between Sustainability and Social Responsibility Behavior and the operational profitability ratios that companies obtain from their continuous operations. The research is based upon the Dow Jones Sustainability Index (DJSI) composed of corporations from three industrial clusters: manufacturing, services, and automobiles and components (S&P Dow Jones, 2016). The reason for this segmentation is the nature of the corporations that are the subject for analysis, since the nature of the industries involves relatively the same components, such as labor, raw materials, distribution, customer service, and relations among other factors.

Furthermore, according to the Dow Jones Sustainability Index, for corporations to be considered Socially Responsible, alcohol, tobacco, firearms, and adult entertainment industries have been excluded from the Index. This exclusion allows them to be considered environmentally sustainable, although, due to the nature of their products, they are considered not to be fit for Social Responsibility (S&P Dow Jones, 2016).

Bearing this in mind, the research has used the Compustat Global Financial Database to acquire the relevant data deemed specific for this study; from such database, the information was obtained regarding the specific Standard Industrial Classification (SIC) Codes for each industrial sector addressed.

Subsequently, the green ratings are analyzed in this thesis by means of establishing the Newsweek Green Rankings components' relationship towards the operational profitability performance and the operational risk involved with the corporations from the Global Fortune 500 Index (Newsweek, 2014-16).

Chapter 2

Sustainability and Social Responsibility, the effect on Profit Margins

The Manufacturing Industry Case

Objectives

This chapter aims to determine the usefulness for a manufacturing corporation to follow Sustainability and adhere Social Responsibility Standards in their operations. The methodology includes a dissection of Sustainable and Socially Responsible Corporations (SSRC) and its Non-SSRC counterparts. The analysis compares profitability at all levels of operations to identify which segment provides better operative results. This paper uses a Longitudinal Multilevel Analysis to compare the four levels of operational profitability.

Results

The conclusions that arise from both the Theoretical Framework and the results from the hypothesis are that having a Sustainable and Socially Responsible performance allows corporations to have significantly better operational results and stability.

Chapter 3

Profitability and performance of Socially Responsible Service Corporations

Objectives

This chapter aims to determine the usefulness for a Service Corporation to follow Sustainability and adhere to Social Responsibility Standards in their operations. The methodology includes a dissection of Sustainable and Socially Responsible Corporations (SSRC) and its Non-SSRC counterparts. The analysis compares profitability at all levels of operations to identify which segment provides better operative results. This paper uses a Longitudinal Multilevel Analysis, to compare the four levels of operational profitability.

Results

The conclusions that arise from both the Theoretical Framework and the results from the hypothesis are that having a Sustainable and Socially Responsible performance allows corporations to have significantly better operational results and stability.

Chapter 4

Ethical processes impact on business operations and profit margins in the Automobile and Components Cluster

Objectives

This chapter aims to determine the usefulness for an Automobile Corporation to follow Sustainability and following Social Responsibility Standards in their operations. The methodology includes a dissection of Sustainable and Socially Responsible Corporations (SSRC) and its Non-SSRC counterparts. The analysis compares profitability at all levels of operations to identify which segment provides better operative results. The paper uses a Longitudinal Multilevel Analysis to compare the four levels of operational profitability.

Results

The conclusions that arise from both the Theoretical Framework and the results from the hypothesis are that having a Sustainable and Socially Responsible Corporations Performance allows corporations to have significantly better operational results and stability.

Chapter 5

SEM Analysis on Global Fortune 500 Corporations with Green Ratings

Objectives

This chapter aims to determine the relationship between green ratings, deemed necessary for eco-efficiency, with regards to their operational performance and effect on operational risk. The methodology includes the utilization of the Newsweek Green Rankings Index regarding the Global Fortune 500 Corporations. Structural Equation Model were employed to assert the relationship that exists between the utilization of eco-efficiency constraints and the operational performance of the corporations, and if it assists to avert or reduce operational risk adverse effects.

Results

The conclusions that arise from the Theoretical Framework are that its implementation would be expected to provide benefits for corporations, while the results highlighted that there was not a significant relationship, at least with the Newsweek Green Rankings.

Chapter 6

Conclusions

This chapter highlights the conclusions that arose from the three different sectors, and how they interact with each other. Additionally, displays the relationship that these results have between the sectors. At the end, future research possibilities within this field of study will be discussed.

CHAPTER 1

INTRODUCTION[3]

[3] All references for this chapter will be at the General Bibliography Section after Chapter 5.

I. Introduction

It is impossible to exaggerate the significance of the contemporary claim that there is a business case for corporate responsibility, business ethics, corporate citizenship, environmental stewardship, pollution control, sustainable development, and the like. Improving the bottom line is not the only possible reason for Corporate Social Responsibility (Vogel, 2005). In the present time there are two terms that are in vogue, one is Sustainability, and the other is Corporate Social Responsibility. Both are often misrepresented in the consciousness of individuals, since both terms are close to each other but do not depict the same meaning.

Sustainability is a term that is linked directly to environmental means of a Corporation to provide ecological means that allow entities to preserve natural resources. The World Commission on Environment and Development on its 1987 Report, defined Sustainability as "meeting the needs of the present (generation) without compromising the ability of future generations to meet theirs" (The World Commission on Environment and Development, 1987). The United Nations have also adopted the same meaning on its 1992 Conference on the Environment and Development (United Nations, 1993). Ever since, environmental efforts have been considered necessary to adopt the lesser usage of pollutants, recycling, and efficiency in the usage of natural resources. From such standpoint, Corporations have the need to improve the environment, or prevent it from further worsening of the environment. Unfortunately, there are plenty of cases where Corporations, in their behavior, have disrespected environmental policies, which means that there is not an entire compliance with such policies. Such actions have forced governments throughout the globe to enforce new regulations towards achieving such goals (Hirsch, 2010).

Corporate Social Responsibility is a term related to ethical behavior performed by Corporations. It has been defined as: “the continuing commitment by businesses to behaving ethically and contributing to economic development while improving the quality of life of their workforce and their families as well as of the community and society at large” (Sims, 2003). Previous scandals from unethical corporate behavior have been condemned by Governments, and individuals ever since, and have become more evident to the public, such cases are commonly known by the public through the press or social media. Examples of popularly known cases are the ones from BP’s several oil spillages and, more recently, Volkswagen’s Infringement of Governmental Policies regarding their emissions control.

There is an ample ongoing debate of opposing views on whether it is beneficial to pursue Socially Responsible Behavior and its relationship with Financial Performance. There are empirical tests of these opposing positions that have long produced mixed results, and so have not resolved this debate (Margolis & Walsh, Misery Loves Companies: Rethinking Social Initiatives by Business, 2003).

Critics of corporate social responsibility point out that it is costly and administratively burdensome for a firm to engage in socially responsible practices such as doling out corporate philanthropy, providing employee day care, granting paid parental leave, and reducing environmental impact. These additional costs and administrative burdens directly detract from the bottom line and so can put socially responsible firms at a competitive disadvantage relative to rivals who do not engage in such practice (Jensen, 2002). This is the core of the argument for those opposing to engaging in Socially Responsible behavior.

Although this argument is valid, it is also criticized amply by the following statement that from a Socially Responsible Investment standpoint choosing amongst the entire universe of stocks, the pool of stocks from which they choose is superior to that of the overall market and, therein, more likely to provide favorable financial returns over time (Barnett & Salomon, 2006).

From such contradictory standpoints it is depicted that the debate is ample and will remain ongoing whether Corporations need to undergo more ethically sound and ecologically fit behavior in terms of complying with the requirements from Governments, public scrutiny, and even possible investors, who are seeking for investments that have a better reputation. On the other hand, there are investors and Corporate Officials who believe that such behavior is derogatory to their operations.

The Stakeholder Theory, considered as being the theoretical foundation for Social Responsibility, states that it is necessary to answer to all the corporations' stakeholders in terms of their needs and requirements in order to guarantee success (Waddock & Graves, 1997). This theory is considered one of the pillars for the implementation of socially responsible behavior within the contemporary business culture. This theory is the foundation of this thesis, since it serves as the Theoretical Framework for the research. In every specific chapter there is the addition of another theoretical frame of reference to add relevance to this research.

This thesis will research if abiding to sustainable procedures is positively related to the operational profit margins of corporations. Such cases will be analyzed by assessing by comparison of Sustainable, and Socially Responsible Corporations against those Corporations that lack such recognition in the Dow Jones Sustainability Indices. The analysis of both types of Corporations will be analyzed in terms of profitability to revise the effect that the implementation will have on the potential for better profit performance.

The thesis also assesses the relationship that exists between the inclusion of eco-efficiency ratings, also called green ratings, and the operational profitability, and operational risk. The operational risk is deemed as the volatility of the EBITDA profit margin within the corporations' performance. Unfortunately, such relationship was not successfully established; therefore, such objective was not fulfilled.

II. Methodology

This thesis studies the relationship that exists between Sustainability and Social Responsibility Behavior and the Profitability Ratios that companies obtain from their continuous operations. The research is based upon the Dow Jones Sustainability Index (DJSI) composed of Corporations from different industries (S&P Dow Jones, 2016).

For the first sample, the Index has been dissected into manufacturing, services, and automobile and components clusters, one cluster per chapter. The reason for this dissection is that the operational performance of such corporations in each specific cluster that are subject of analysis involve relatively the same components, such as labor, raw materials, distribution, customer service, and relations among other factors.

Furthermore, according to the Dow Jones Sustainability Index, for Corporations to be considered Socially Responsible, it has excluded alcohol, tobacco, firearms, and adult entertainment industries from the Index. Allowing the latter to be considered environmentally sustainable, although due to the nature of their products they are considered not to be fit for Socially Responsible (S&P Dow Jones, 2016).

Bearing this in mind, the research has used the Compustat Global Financial Database to acquire the relevant data deemed specific for this study, from such database, the information was obtained regarding the specific Standard Industrial Classification (SIC) Codes for each Industrial Sector. See Appendix Section for the full descriptive statistics of the dissection of the Index and the Database.

The second sample was employed for the fifth chapter attempting to determine eco-efficiency and risk's relationship in terms of operational profitability, it was obtained from the Newsweek Green Rankings Index, and in conjunction with the Compustat Database. The financial information was obtained pertaining to the specific Global Fortune 500 Corporations depicted in the Index. The time frame for this study was the given from 2014 through 2016, due to the lack of access for the previous years while having a substantial change in methodology for the following years, which would substantially alter the results.

III. Structure of the Dissertation

This Dissertation has the format of four academic research papers meant to be published by scientific journals, therefore, they have that standard structure. A final chapter on overall conclusions is included.

Chapter 2

Sustainability and Social Responsibility, the effect on Profit Margins

The Manufacturing Industry Case

This chapter explores the terms of Sustainability and Corporate Social Responsibility while discussing its application for the manufacturing-related cluster.

Chapter 3

Profitability and performance of Socially Responsible Service Corporations

This chapter explores the terms of Sustainability and Corporate Social Responsibility while discussing its application for the service-related cluster.

Chapter 4

Ethical processes impact on business operations and profit margins in the Automobile and Components Cluster

This chapter explores the terms of Sustainability and Corporate Social Responsibility while discussing its application for the automobile and components cluster.

Chapter 5

SEM Analysis on Global Fortune 500 Corporations with Green Ratings

This chapter explores the eco-efficiency ratings relationship, if any, with the operational profitability performance, as well as the relationship with the reduction of operational risk.

Chapter 6

Conclusions

Overall Conclusions that arose from the discussion and results of the four previous chapters will be addressed, while proposing future research opportunities.

CHAPTER 2

Sustainability and Social Responsibility, the effect on Profit Margins

The Manufacturing Industry Case[4]

[4] This paper has been presented at the 7th Global Business Conference in Zagreb, Croatia Oct. 2016 and the UCM Ph.D. Day Conference Dec. 2017.

I. Abstract

This paper aims to determine the usefulness for the manufacturing industrial cluster to follow Sustainability and Social Responsibility Standards in their operations, as well as explaining the concepts, and their application for corporations. Since such constraints are more related to accounting measures than market-based measures, the operational profit margins are being analyzed. The methodology includes a dissection of Sustainable and Socially Responsible Corporations (SSRC) and its Non-SSRC counterparts; this paper compares both segments by employing Longitudinal Multilevel Analysis (LME) to identify if there is a positive relationship between sustainable and socially responsible constraints towards operational profit margins. The objective of this paper is to provide empirical evidence that shows if corporations are not abiding responsible legality, and undergoing sustainable procedures as a means of operating, will find their resulting operational performance to be worsened by such behavior, as a mean to motivate them to perform under such constraints.

Key Terms: Sustainability, Corporate Social Responsibility, SSRC, Risk, Profit.

JEL Classification: C32, D25, G32, M14, Q01

II. Introduction

It is impossible to exaggerate the significance of the contemporary claim that there is a business case for corporate responsibility, business ethics, corporate citizenship, environmental stewardship, pollution control, sustainable development, and the like. Improving the bottom line is not the only possible reason for Corporate Social Responsibility (Vogel, 2005). In the present time there are two terms that are in vogue, one is Sustainability, and the second one is Corporate Social Responsibility (CSR). Often, misrepresented in the consciousness of individuals, since both terms are perceived as similar, but their meaning is substantially different.

Sustainability is a term used to describe environmental efforts for the preservation of natural resources. The World Commission on Environment and Development, on their 1987 Report, defined Sustainability as "meeting the needs of the present (generation) without compromising the ability of future generations to meet theirs" (The World Commission on Environment and Development, 1987). The United Nations have also adopted the same meaning at the 1992 Conference on Environment and Development (United Nations, 1993). Subsequently, environmental efforts have been considered necessary to encourage the reduction of pollutants utilization, a focus towards recycling, and efficiency in the consumption of natural resources. From such a standpoint, corporations have the need to improve the environment, or avoid further worsening of the environment. However, there are plenty of cases where Corporations in their behavior have disrespected environmental policies demonstrating that there is not an entire compliance of such policies. Such behaviors have forced governments throughout the globe to enforce new regulations towards achieving such goals (Hirsch, 2010).

An example of this, since 1978 the German Advisory Council on the Environment has been advocating ideas for a green leadership, as well as the need for environmental policies that drive innovation. After the adoption of environmentally friendly policies, costs are frequently lower than initially estimated (Oberthur, 2010). This example shows that there are other concurrent efforts in searching for obtaining better results by advocacy. One example is the infamous case of Volkswagen that took advantage of the advocacy campaign, therefore, have taken many initiatives to reduce the environmental impact of its supply chain (Parboteeah et al., 2013).

Corporate Social Responsibility, on the other hand, is a term related to the ethical behavior undergone by corporations, or the lack of it. It has been defined as: "the continuing commitment by businesses to behave ethically and contribute to economic development while improving the quality of life of their workforce and their families as well as of the community and society at large" (Sims, 2003). Previous scandals from unethical corporate behavior have been condemned by governments and individuals since then and have become more evident to the public through press releases or social media. Examples of popularly known cases are those from BP several oil spillages and, more recently, Volkswagen's infringement of governmental policies regarding their emissions control.

There is an ample ongoing debate of opposing views on whether it is beneficial to pursue Socially Responsible Behavior and its relationship with financial performance. There are empirical tests for these opposing positions that have produced mixed results which, therefore, do not resolve this debate (Margolis et al., 2003). The opposing view is based on a profit-seeking rationale, while the supporting view is based on a reputation-seeking rationale that will further expand profit margins and return on investments in the long-run.

Critics of CSR point out that it is costly and administratively burdensome for a firm to engage in socially responsible practices such as doling out corporate philanthropy, providing employee day care, granting paid parental leave, and reducing environmental impact. These additional costs and administrative burdens directly detract from the bottom line and so can put socially responsible firms at a competitive disadvantage relative to their rivals who do not engage in such practice (Jensen, 2002). This is the core of the argument for those managers opposed to engage in socially responsible behavior, that it will exert a heavy burden on their financial structure.

This argument has been widely debated by the following rationale, a Socially Responsible Investment standpoint chooses amongst the entire universe of stocks, the ones that have a superior social reputation relative to the overall market with the expectancy of being more likely to provide favorable financial returns over time (Barnett et al., 2006). As entailed, Sustainability and CSR are becoming decision-making qualitative rationales, from which corporations should strive to be perceived as sustainable and socially responsible to reach out for investors seeking companies with such reputation and their entailed benefits.

This paper tests a hypothesis that intends to establish the relationship of corporations being considered sustainable and socially responsible towards their operational profit margins. The hypothesis will be tested by means of longitudinal multilevel technique. The intended objective is to address if recognition affects operational profit margins and to provide significant incentive for corporations to behave ethically and operate sustainably.

III. Theoretical Framework and Hypothesis Development

The concept of sustainability “originally balancing development with conservation, has since evolved into a broader principle that governments, organizations, and individuals should conduct themselves without impinging on the environment and society now or in the future” (Kates, 2005). The Stakeholder Theory, considered as being the theoretical foundation for Social Responsibility, states that it is necessary to answer to all the corporations’ stakeholders in terms of their needs and requirements in order to guarantee success (Waddock & Graves, 1997). Furthermore, and as the study on this field has developed, Savitz has introduced the concept of the "triple bottom line": traditional bottom line of financial performance adding two bottom lines reflecting the businesses’ environmental and social performance (Savitz & Weber, 2006).

These concepts suggest that corporations are liable to both stockholders and other stakeholders (society, suppliers, and consumers), indicating they should pursue ecologically sound and socially responsible profits. The pursuit of such profits will assist in maintaining stockholder confidence. The confidence of investors in financial markets has been weakened by the financial fraud scandals such as the Enron, Worldcom, and Arthur Andersen cases in the USA. Such incidents have led numerous investors to doubt the reliability of financial statements in judging a company's true value. As a result, corporate reputation has come under an unprecedented challenge, reason for Socially Responsible Investment’s (SRI) exponential growth (Tsai et al., 2009). Also, stakeholders will not approve the idea of being related to a company with bad reputation or that may default due to governmental intervention.

From such standpoint, corporations can no longer rely only on fulfilling the operational performance. National governments have gotten together to apply worldwide plans to reduce pollution, a recent attempt was the proposal of the Trans-Pacific Plan for the reduction of carbon emissions unfortunately, currently in queue. Furthermore, regarding enforcement of Social Responsibility, the US has enforced since 1977 on their corporations the Foreign Corrupt Practices Act. The Securities and Exchange Commission, the enforcement agency, has filed 5 cases in 2017, and over 100 cases since its establishment in 1977 (U.S. Securities and Exchange Commission, 2017). This law addresses the need for corporate officials to follow ethical behavior in nations where governments may have different policies towards corruption or unethical behavior.

Unfortunately, corporate officials face this situation as a paradigm where performing under both sustainable and socially responsible constraints presents a problem towards their financial performance, since most corporations seek short-term profitability rather than long-term profitability. Corporate officials believe that investing in environmental technology is costly, with no real payback; therefore, they are reluctant to pursue the risk of such investment costs with no viable financial return (Doorasamy et al., 2016). However, Ziegler and Schroder have showed that Socially Responsible Investment assets have had a strong growth potential of more than 1200%, between 1995 and 2005 (Ziegler & Schroder, 2009).

Furthermore, there is evidence that corporate officials have turned to philanthropy to reduce their wrongful doings affecting the environment and society in general (Du X. , 2015). Such expenditures and the fact that corporations have been subject to substantial fines from government agencies is a factor that produces a lower financial performance. These variables play a role in the present study affecting the financial performance of non-sustainable corporations. The reason for this to occur is what Alexander depicts as the three foremost important rules of corporations: a) Maintain a Viable Corporation that competes successfully in the marketplace, b) Maintain a Corporation that fully abides to the laws and regulations of such Industry, and c) Cause no harm in their operations (Alexander, 2007). Such behavior and ideas prioritize the financial performance, and relegates Social Responsibility and Sustainability, in that order, to secondary positions.

Savitz's triple bottom line is based on achieving a good performance on the commonly accepted profitability bottom line, while also achieving good performance on what he adds as an environmental bottom line, and on an additional ethical bottom line (Savitz & Weber, 2006). This concept entails that for a corporation to be able to suffice societal requeriments it must have a good performance on the three different bottom lines. Corporations that achieve the recognition for having fulfilled the three bottom lines, according to Savitz, can improve their reputation, which on the long-run will grow their profitability margins and enhance their brand recognition (Savitz & Weber, 2006).

Experimental research shows consumers are not only interested in social responsibility but consider it fundamental when evaluating companies and purchasing products; hence, opting for those corporations with an increased sense of confidence, and an enhanced perception of corporate behavior (Brown, 1997). Consumers behave this way because of their perception of what corporations portray in the media, their knowledge of the corporations, and their known behavior. Hence, a proposal is to advertise the good qualities of the corporation, their impact on society and on the environment through advertising (Oberseder et al., 2014).

Other studies suggest that corporations seek that their customer base be loyal to the brand, because customers are the most limited resource for corporations and their loyalty directly affects their profit (Edvardsson et al., 2000). Along these lines, customers' cognitive associations regarding Social Responsibility directly influence affective responses as well as their identification with the company, affecting customer emotions and the identification of customers with the corporation, and determining their brand loyalty (Perez et al., 2015). By such means, corporations can thoroughly achieve the triple bottom line placing special attention on the most valuable resource: customers and their loyalty representing sustained profits in the long-term. Bucaro et al. depicted that integrating CSR measures with traditional financial reports reduces the extent to which investors include CSR measures in their judgments, relative to issuing separate CSR reports. This occurs because the integrated report emphasizes financial information as enough input to investors' judgments while if considered as separate entities, investors would consider them as a multivariable analysis (Bucaro et al., 2017).

Hur et al. relates Social Responsibility with regards to brand equity valuation, and brand credibility is related to increased corporate brand equity, considering the role of corporate reputation in this relationship (Hur et al., 2014). Furthermore, the stock market anticipates that more profitable firms invest more in environmental social responsibility (Cordeiro et al., 2015). Such statements support Savitz's triple bottom line theorem by establishing the link between social responsibility scores and financial returns have changed over the last several years owing it to increased investor concerns with social and environmental issues.

Now, the consideration at hand is if by pursuing the triple bottom line, corporations can expect sustained long term improved financial results. Mill examined the effect of time on investments as part of his 2006 research. In his research he encountered volatility that somehow affected the results of the research (Mill, 2006). Furthermore, on this regard, Blot et al. stated that conventional wisdom dictates that if a corporation is financially stable, then the capital structure must also be stable, which will allow corporations to access credit and other financial services with ease (Blot et al., 2015).

Orlitzky et al. stated that CSR and operational performance "are more highly correlated with accounting-based measures than with market-based indicators" (Orlitzky et al., 2003). From such statement is inferred that CSR performance is more operational-based than market-based. Therefore, a Sustainable and Socially Responsible behavior must be guided towards achieving operational benefits and leverage. As Karma & Sanders stated, most corporations attempt to reduce external risk by operational leverage, a situation that aims to provide security for the investments (Karma & Sander, 2006).

Based on the Stakeholder Theory and on Savitz's triple bottom line, which establishes that if a corporation achieves recognition of fulfilling the financial, environmental, and ethical bottom lines; while not undermining one of the three; such corporation's reputation will further expand their financial returns and improve their profit margins in the long run (Waddock & Graves, 1997; Savitz & Weber, 2006). And considering what Mill, and Blot et al. presented, that time and stability have a direct effect upon profitability, and financial operationality of corporations (Mill, 2006; Blot et al., 2015). The present study, through a series of longitudinal multilevel techniques, will analyze whether achieved reputation for being sustainable and socially responsible provides higher operational profit results for such corporations with a sustained performance in time. This study, the operational profit margins, deemed as the EBITDA, EBIT, Pre-Tax, and Net Income are forecasted to be better for the corporations with the reputation of being sustainable and socially responsible than their counterpart without such recognition. Therefore, the following hypothesis is formulated as:

H1: Achieved recognition for being sustainable and socially responsible is positively related to operational profit long-run performance.

IV. Data and Methodology

This paper studies the relationship that exists between Sustainability and Social Responsibility recognition towards the operational profitability margins by means of comparison between corporations that have achieved recognition for being sustainable and socially responsible versus their competition that have not been awarded with such recognition. For this specific study, the Dow Jones Sustainability Index was employed to distinguish which corporations have received the recognition for being sustainable and socially responsible. As a means of standardization between operational profit margins, the study will be focusing on the manufacturing sector, since the nature of its industrial processes involves a very intricated and equivalent structure in terms of labor, raw materials, distribution, among other factors condensing the data into a specific sector.

A. Sample and Variable Definition

The sample was based on the Dow Jones Sustainability Index as the foundation for acknowledging the recognition of sustainable and socially responsible corporations and their non-recognized counterparts. This index is composed of corporations that are publicly traded globally within the Dow Jones Stock Market, including only those corporations that have been awarded a high evaluation for being at the top 10% best performance within their correspondent industrial sector is the measure for being recognized within this index (S&P Dow Jones, 2016). This index provides the specific cut point used to compare the performance of the top 10%, in terms of Sustainability and Social Responsibility, versus its underperforming 90% counterpart of the manufacturing sector. See Table 1 for information regarding the composition of the DJSI.

Table 1. Dow Jones Sustainability Index Industrial Sectors

Dow Jones Sustainability Index Industrial Sectors
Automobiles and Components
Banks
Capital Goods
Commercial and Professional Services
Consumer Durables and Apparel
Consumer Services
Diversified Financials
Energy
Food & Staples Retailing
Food, Beverages & Tobacco
Health Care Equipment & Services
Household & Personal Products
Insurance
Materials
Media
Pharmaceuticals, Biotechnology & Life Sciences
Real Estate
Retailing
Semiconductors & Equipment
Software & Services
Technology Hardware & Equipment
Telecommunication Services
Transportation
Utilities

Subsequently, in order to compare the performance of the Sustainable and Socially Responsible Corporations (SSRC) with their (Non-SSRC) counterparts, the Compustat Global Financial Database was utilized to acquire the relevant operational profit margin data deemed specific for this study (Standard & Poor's/Compustat, 2017). The analysis was condensed in the manufacturing sector from such database utilizing the specific Standard Industrial Classification (SIC) Codes from manufacturing related industries, ranging from 1000 to 5700, and the 9990's Codes, and those specific correspondent subdivisions for the manufacturing sector. See Table 2 for a condensed list concerning the SIC Codes (Securities and Exchange Commission, 2017).

Table 2. Condensed SIC Code List

SIC Codes	Industrial Sector
0100-0999	Agriculture, Forestry and Fishing
1000-1499	Mining
1500-1799	Construction
1800-1999	Not Applicable
2000-3999	Manufacturing
4000-4999	Transportation, Communications, Electric, Gas and Sanitary Services
5000-5199	Wholesale Trade
5200-5999	Retail Trade
6000-6799	Finance, Insurance and Real Estate
7000-8999	Services
9100-9729	Public Administration
9900-9999	Non-Classifiable

The study focuses on the data obtained from their SIC appropriate Corporation's performance from their fiscal years ranging from 2011 through 2015, five years from each Corporation. The database gave as a result the availability of information from 19,089 Corporations. However, the research had to eliminate some Corporations, based on the following Criteria:

a) Due to the nature of being a worldwide research, with available data from 118 countries, the US corporations follow the U.S. GAAP normative, while the majority of the remainder countries use the IFRS normative; however, these accounting rules may have substantial differences between each other. For this study, it is relevant to point out that the operational profit margins are for comparison purposes and a standardization of such accounting principles is not available to the researcher. Furthermore, for the study to be accurate without dealing with different exchange rates to convert to a specific currency, and the empirical difference of numerical amounts of income and profit; the study was deemed to be based upon their EBITDA, EBIT, Pre-Tax, and Consolidated Net Income Margins to standardize the overall performance for the entirety of the Corporations.

b) Lack of financial figures on a specific operational profit margin, which will not allow the study to have substantial availability of data, specifically to obtain the operational profit margins.

c) Under-reporting, Corporations that had insufficient information for at least 4 years, which did not allow the standardization of the study.

d) After running the database without the above-mentioned criteria, outliers pertaining to the 1 and 99 percentiles were eliminated from the study, mainly due to errors found on the database or misrepresentation of data. In such cases where the margins became outliers such as +/- 100%, there was no significant difference in the means of both pre-and-post criterion performance (Fitza, 2014; Quigley & Graffin, 2016).

Furthermore, according to the Dow Jones Sustainability Index, for corporations to be considered Socially Responsible alcohol, tobacco, firearms, and adult entertainment industries have been excluded from the Index, which allows them to be considered environmentally sustainable, although they may not be considered fit for Social Responsibility due to the nature of their products (S&P Dow Jones, 2016).

The final database was subsequently segmented into Sustainable and Socially Responsible Corporations (SSRC) accounting for 151 Corporations, and Non-Sustainable or Socially Responsible Corporations (Non-SSRC) accounting for 15,496 Corporations; totaling 15,647 Corporations.

B. Procedure

The hypothesis was analyzed with the use of SPSS 22 Statistical software (IBM Corp., 2013). The following model was employed to test the hypothesis:

H1: To empirically test this hypothesis, the intention was to obtain the mean of the SSRC and its Non-SSRC counterpart for each one of the four profitability margins (EBITDA, EBIT, Pre-Tax, Net-Income) being tested individually, as a visualization principle for the mean and the difference among the two analyzed sectors. Subsequently, the study tests each of the four margins individually under the one-tailed F-test to see the statistical significance of the analysis at an α of .05. This model accounts for variance difference between the two comparison groups. See Table 3 for the descriptive statistics of the Net Profit Margin of the study subjects according to their SIC Code. In the following section, the results of the comparison between subjects, SSRC and its counterpart, will be discussed.

Table 3. Descriptive Statistics of Net Profit Margins of the SSRC and Non-SSRC Groups

	SSRC			Non-SSRC		
Sector	Companies	Mean	Std. Dev.	Companies	Mean	Std. Dev.
Mining and Construction[1]	17	4.75%	6.2%	1,300	- 1.10%	22.70%
Manufacturing[2]	102	2.10%	13.2%	10,890	2.1%	13.20%
Transportation[3]	17	13.5%	11.1%	1,700	5.7%	14.20%
Wholesale Trade[4]	8	2.3%	1.80%	1,414	1.6%	9.60%
Others[5]	7	5.5%	7.1%	192	3.10%	22.70%
Total	151			15,496		

[1]Specific manufacturing subsectors of the 1000 SIC Codes.
[2]Specific manufacturing subsectors of the 2000 and 3000 SIC Codes.
[3]Specific manufacturing subsectors of the 4000 SIC Codes.
[4]Specific manufacturing subsectors of the 5000 SIC Codes.
[5]Specific manufacturing subsectors of the 9000 SIC Codes.

A longitudinal multilevel test was employed to further analyze this hypothesis in terms of the possibility of the effect of time within the two subjects of interest, the SSRC group and its counterpart. The first part of the test was to test the difference in means of the SSRC subject and its Non-SSRC counterpart; subsequently, the longitudinal test was employed to test the significance of the effect of time in this comparison of means at an α of .05.

V. Results

As stated earlier, the dissection of SSRC vs. Non-SSRC was employed to test the hypothesis that the financial performance of SSRC is better than the performance of Non-SSRC, testing them as follows:

H1: Achieved recognition for being sustainable and socially responsible is positively related to operational profit long-run performance.

A longitudinal multilevel test was performed for each research variable: EBITDA, EBIT, Pretax, and Net Income to test whether there is a significant difference among the SSRC, and its Non-SSRC counterpart, providing the following results depicted in Table 4, which summarizes the results of the performance of both study groups with the F-test results for mean comparison and within time performance.

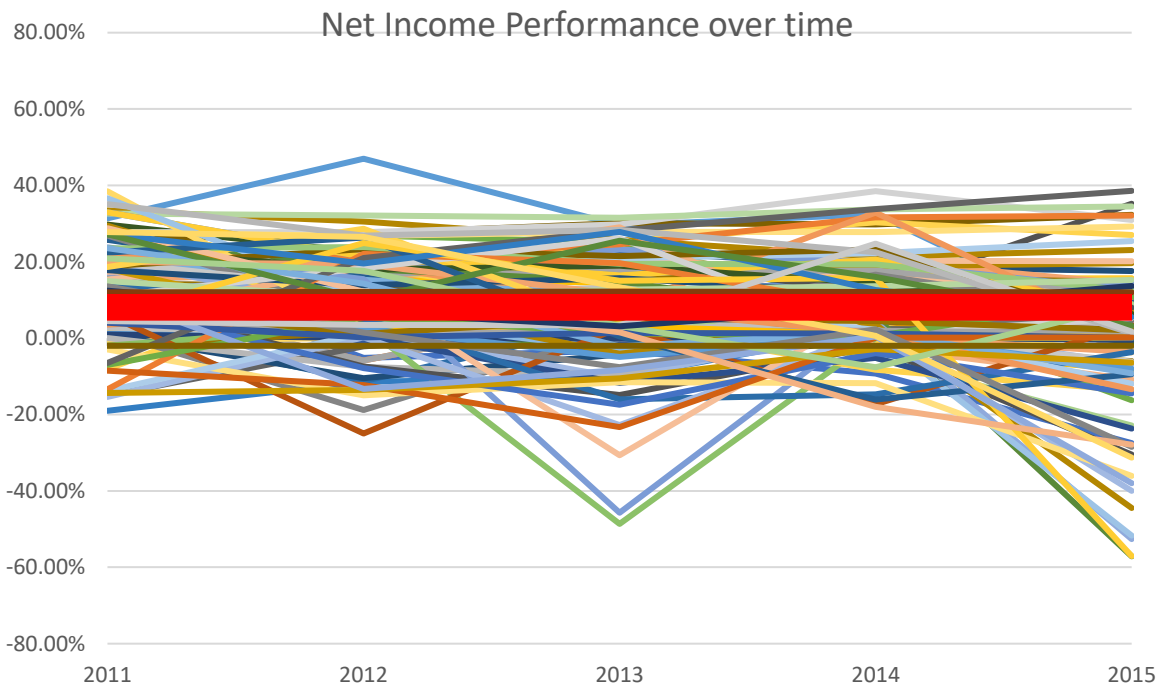
Table 4. Results of the 4 Operative Profit Margins Comparison

		EBITDA	EBIT	Pre-Tax	Net Income
	Mean	18.5%	15.0%	11.5%	7.7%
SSRC:	Std. Dev.	14.9%	14.5%	12.1%	8.9%
	Mean	9.6%	5.3%	4.3%	2.6%
Non-SSRC:	Std. Dev.	18.0%	17.7%	32.0%	13.0%
Mean F-Test		7,406.1*	161.9*	1,564.5*	4,210.9*
Time F-Test		0.0+	1.5+	0.0+	0.0+

*Significant at α of 5%; +Not-Significant at α of 5% Results from SPSS and M-Plus

On all four cases there is consistency on the results. The overall Profit Margin performance is better on the SSRC segment than its counterpart. With all these measures, the H_1 is accepted for all the specific margins and collectively as a group. Time had no direct effect upon the development of the operational profit margins on the four margins seen with no significant difference, which works accordingly to each corporation's operational profitability performance because they behave similarly on their activities within their industry. Reasons where it may be statistically different due to time interaction would be regarding substantial sales increments or reductions, affected by economic, political, or social externalities on a specific region or the entire globe. This situation works in favor of the hypothesis, depicting a standardization of performance within years, providing validity because the means were not affected by effects of over or under performers within time or by external economic factors. The following Figure 1 depicts the overall behavior of the Net Income over time for all the participants in this study, both the SSRC and its counterparts totalizing 15,647 participants, where the red line depicts that the mean has no significant movement and it is consistent with the test and no externalities impact.

Figure 1. Overall Net Income Mean Performance over Time.



VI. Discussion

This paper seeks to explore the relationship between the achieved recognition of being sustainable and socially responsible, and the operational profitability margins within a very homogeneous Cluster. The results that arise from this study depict a consistent behavior for those corporations that have achieved the status of being SSRC and overall better operational performance, while its counterparts shows a lower performance.

The limitations for this study were the availability of one index that contributes real data for the analysis of all the variables. Another limitation was the non-standardization of the accounting principles of the U.S. GAAP and the IFRS norms and their implication on the results, opens an opportunity for future research to test if the results in the present study were affected in part by this situation.

Future research opportunities are open for other clusters and application to businesses requiring evidence that achieving recognition for being SSRC is necessary for their operational performance. As well as the opportunity to measure it by countries, which opens another future research opportunity for the present study.

VII. Conclusions

The conclusions that arise from both the Theoretical Framework and the results from the hypothesis is that having a recognized sustainable and socially responsible corporation's performance allows such corporations to have significantly better operational results, stability, and allows them to outperform their counterpart. In accordance to the Stakeholder Theory, and the triple bottom line, a corporation that does fulfill the requirements of their stakeholders benefit largely from their Sustainable and Socially Responsible Behavior (Waddock & Graves, 1997; Savitz & Weber, 2006).

As Orlitzky et al. stated that CSR and operational performance "are more highly correlated with accounting-based measures than with market-based indicators" (Orlitzky et al., 2003). Bearing this in mind, this paper fulfills a gap in sustainability and socially responsible research, where it tests the impact of achieved recognition and the operational performance of corporations. Also, asserting that long-run performance can be consistent as no externalities were present (Mill, 2006; Blot et al., 2015).

The objective of this paper was achieved by the results obtained, which establish that there is a significant relationship with regards to corporations being recognized for sustainability and socially responsible behavior. Furthermore, the observance of higher operational results at the four profitability levels evidence how much impact corporations allocate from being recognized as sustainable and socially responsible, statement that concludes that corporations should benefit from performing under sustainable and ethical constraints.

The intended contribution as well as the objective were fulfilled by testing the evidence from different sources to show that external factors affect corporations' performance, while stating that if a corporation persists in its unsustainable and non-socially responsible behavior, consequences are going to be observed in the operational profit margins and performance. Such companies have lower profit margins and bad reputation for not achieving this recognition, and obviously less sales, is a combination that most corporations throughout industrial sectors cannot afford.

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CHAPTER 3

Profitability and performance of Socially Responsible Service Corporations

I. Abstract

This paper aims to determine the usefulness for the service industrial cluster to follow Sustainability and Social Responsibility Standards in their operations, as well as explain the concepts, and their application for corporations. Since such constraints are more related to accounting measures than market-based measures, the operational profit margins are being analyzed. The methodology includes a dissection of Sustainable and Socially Responsible Corporations (SSRC) and its Non-SSRC counterparts; the paper compares both segments by employing Longitudinal Multilevel Analysis (LME) to identify if there is a positive relationship between sustainable and socially responsible constraints towards operational profit margins. The objective of this paper is to provide empirical evidence that states that corporations not abiding responsible legality, and undergoing sustainable procedures as a means of operating, will see their resulting operational performance worsened by such behavior, as means to motivate them to change and operate under sustainable and socially responsible constraints.

Key Terms: Sustainability, Corporate Social Responsibility, SSRC, Risk, Profit.

JEL Classification: C32, D25, G32, M14, Q01

II. Introduction

Lantos, 2001, quoted the Scottish philosopher, Adam Smith's "The Wealth of Nations", as the foundation of modern business; whereas, in capitalism the freedom to choose, work, purchase, capitalize, and invest as a mean to pursue gain and efficiency, entails the greater good of society (Lantos, 2001). It is entailed, if capitalism is efficient at providing means of production and the means for living gracefully for most of the individuals, it is the foundation of Social Responsibility.

Novak has defined the economic Social Responsibility under seven constraints: a) Satisfy customers with goods and services of real value; b) Earn a fair return on the funds entrusted to the corporation by its investors; c) Create new wealth; d) Create new jobs; e) Empower upward mobility; f) Promote innovation; diversify economic interests (Novak, 1996). Furthermore, ethical duties entail being moral, doing what is right, just, and fair, respecting peoples' moral rights, and avoiding harm or social injury as well as preventing harm caused by others (Smith & Quelch, 1993).

Together with the existence of ethical duties, Laws exist. Laws regulating business conduct are passed because society does not always trust business to do what is right. In most of the cases, Laws were created as reactive, rather than being proactive (Lantos, 2001). Ethical and moral constraints encourage societal members to follow such behavior, which is expected to bring benefits to such followers. The previous statements about ethical and moral behavior open a question for corporations: Is it beneficial to their performance to operate under ethical constraints?

To answer the previous question there is an ample ongoing debate of opposing views on whether it is beneficial to pursue socially responsible behavior and its relationship with financial performance. There are empirical tests of these opposing positions which have long produced mixed results, and so have not resolved this debate (Margolis & Walsh, Misery Loves Companies: Rethinking Social Initiatives by Business, 2003). For instance, Derwall et al.; Lee and Faff, among other researchers, have concluded that socially responsible investments outperform its counterpart in investment terms for their shareholders (Derwall et al., 2005; Lee & Faff, 2009). While, on the other hand, Bauer et al.; Schroder, among other researchers, have found no significant difference between socially responsible companies' performance and their non-socially responsible competitors in terms of return on investment (Bauer et al., 2005; Schroder, 2007).

This paper attempts to fulfill a gap in literature related to the operational performance of corporations that have achieved a recognition for being Sustainable and Socially Responsible Corporations, analyzing the Service Cluster. The objective of this paper is to analyze a Cluster that is highly intricated with customer interaction, where ethical behavior is observed directly by customers. As Ibrahim et al. have stated that corporations in the service cluster tend to behave ethically due to their constant interaction with their customers; thereof, cannot afford not to perform ethically. (Ibrahim et al., 2003).

III. Theoretical Framework and Hypotheses Development

Today, Corporate Social Responsibility is a more acceptable way of doing business for many companies worldwide. The reason for this is that shareholders, business partners, customers, and vendors have the expectation that every corporation that they manage to do business with, meet ethical, environmental, and human rights highest standards (Gillis, 2011).

The contemporary history of Corporate Social Responsibility began in 1953, when Howard Bowen published his book the Social Responsibilities of the Businessman. The book discusses the relegation of women in businesses and wonders about what the responsibilities towards society from business entities shall be (Bowen, 1953). Bowen was a pioneer in bringing up to people's minds Social Responsibility and Ethics.

The following decades, with the fall of the Soviet Block and the beginning of globalization, governments and societies altogether began enforcing more relationships towards achieving a more responsible business environment, with control of environmental, societal, and employment regulations (Carroll, 2015). Everything progresses in perpetual motion, some for good, others for bad. What is important to uphold is the acceptance that Corporate Social Responsibility has achieved throughout the globe. Most countries have adopted stronger regulations in terms of environmental protection, workers' rights with equalitarian treatment for all individuals, and the deployment of harsher ethical procedures.

Sustainability is the dynamic state of human resources regeneration and growth by integrating the activities of a large variety of stakeholders (Ehnert et al., 2013). People relate better with a company that has better quality image of service and respects the environment. Another reason is that if employees feel a deeper connection and equality with the company they work for, the employees will provide a better service for the current and future customers. It is a matter of established perception and behavior.

Furthermore, Waddock and Graves have published "The Stakeholder Theory", considered the theoretical foundation for Social Responsibility, states that it is necessary to answer to all of the corporations' stakeholders in terms of their needs and requirements in order to guarantee success (Waddock & Graves, 1997). This theory, as the foundation for corporate social responsibility, offers a link for corporate success, especially for economic sectors such as the service cluster with direct relationship with their stakeholders. Hellsten & Mallin have researched and concluded that ethically based investments turn out better results for investors, and blame unethical behavior for the result of expecting only monetary returns while affecting the society (Hellsten & Mallin, 2006). As seen, ethical behavior offers benefits for corporations to enforce such behavior.

The purpose of this paper is to attempt to fulfill a gap in literature relative to the operational performance of corporations in the service cluster. Margolis et al. found that corporate social responsibility measures are highly correlated to the operational performance of corporations, which are deemed accounting measures rather than financial measures (Margolis et al., 2007). Therefore, this paper attempts to test that corporations that have been recognized for their Sustainable and Social Responsibility efforts run a better performance than those who do not abide by such behavior. As stated by other authors, SSRC have a more interconnected relationship with their shareholders, due to better results (Sneirson, 2011).

Another consideration is what Van Bellegem & Von Sachs have reported that forecasting is dependent on time, which is not easy to perform while having externalities circumscriptive to specific time intervals (Van Bellegem & Von Sachs, 2004). As a result of this and other previous research, it is necessary to consider the revision of the time performance at hand to avoid its effects to upset the results of the current research.

Based on the Stakeholder Theory and on Ibrahim et al.'s research, corporations need to obey their stakeholders' needs for doing business with a socially responsible corporation which will improve their profit margins in the long run (Waddock & Graves, 1997; Ibrahim et al., 2003). Furthermore, as stated by Margolis et al. that operational performance of corporate social responsibility is an accounting measure (Margolis et al., 2007); and Van Bellegem & Von Sachs's statement that specific period time is a factor to consider when analyzing operational performance (Van Bellegem & Von Sachs, 2004).

Subsequently, employing longitudinal multilevel techniques, this paper will analyze whether achieved reputation for being sustainable and socially responsible provides higher operational profit results for such corporations with a sustained performance in time. For the present study, the operational profit margins, deemed as the EBITDA, EBIT, Pre-Tax, and Net Income are forecasted to be better for the corporations with sustainable and socially responsible reputation than their unrecognized competitors. Therefore, the first hypothesis is stated as:

H1: Achieved recognition for being sustainable and socially responsible is positively related to operational profit long-run performance.

IV. Data and Methodology

This paper studies the effect that Sustainability, Social Responsibility recognition enacts upon operational profitability margins by means of comparison between corporations that have achieved recognition for being sustainable and socially responsible against their unawarded competition. The Dow Jones Sustainability Index was utilized to distinguish which corporations have been awarded as sustainable and socially responsible; different areas of the service cluster have been utilized in the analysis.

A. Sample and Variable Definition

The Dow Jones Sustainability Index is composed of corporations that are publicly traded globally within the Dow Jones Stock Market, awarding recognition only to those corporations that have a high evaluation of being at the top 10% best performance of their correspondent industrial sector, as the means to be part of it (S&P Dow Jones, 2016). This index provides the specific cut point used to compare the performance of the top 10%, in terms of Sustainability and Social Responsibility, versus its underperforming 90% counterpart in the service sector.

Subsequently, in order to compare the performance of the Sustainable and Socially Responsible Corporations (SSRC) with their (Non-SSRC) counterparts, the Compustat Global Financial Database was utilized to acquire the relevant operational profit margin data deemed specific for this study (Standard & Poor's/Compustat, 2017). The Standard Industrial Classification (SIC) Codes from the service cluster were employed, such SIC Codes range from 1500-1700; 4200-4900; 5700-5900; and 6700-8000 Codes. The study focuses on the data obtained for their fiscal years ranging from 2011 through 2015, five years from each Corporation. The database gave as a result the availability of information from 19,846 Corporations. However, the research had to eliminate some Corporations, based on the following Criteria:

a) Due to the nature of being a worldwide research, with available data from 118 countries, the US corporations follow the U.S. GAAP normative, while the majority of the remainder countries use the IFRS normative. Although, these accounting rules may have substantial differences between each other, for this study, it is relevant to point out that the operational profit margins are for comparison purposes and a standardization of such accounting principles is not available to the researcher. Furthermore, for the study to be accurate without dealing with different exchange rates to convert to a specific currency and the empirical difference of numerical amounts of income and profit; the study was deemed to be based upon their EBITDA, EBIT, Pre-Tax, and Consolidated Net Income Margins to standardize the overall performance for the entirety of the Corporations.

b) Lack of financial figures on a specific operational profit margin, which will not allow the study to have substantial availability of data, specifically to obtain the operational profit margins.

c) Under-reporting, Corporations that had insufficient information for at least 4 years for being able to standardize the study.

d) After running the database without the above-mentioned criteria, outliers pertaining to the 1 and 99 percentiles were eliminated from the study, mainly due to errors found on the database or misrepresentation of data. In such cases where the margins became outliers such as +/- 100%, there was no significant difference in the means of both pre-and-post criterion performance (Fitza, 2014; Quigley & Graffin, 2016).

The final database was subsequently segmented into Sustainable and Socially Responsible Corporations (SSRC) accounting for 210 Corporations, and Non-Sustainable or Socially Responsible Corporations (Non-SSRC) accounting for 17,502 Corporations; totaling 17,712 Corporations.

B. Procedure

The hypothesis was analyzed with the use of SPSS 22 Statistical software (IBM Corp., 2013). The following model was employed to test the hypothesis:

H1: To empirically test this hypothesis, the intention was to obtain the mean of the SSRC and its Non-SSRC counterpart, for each one of the four profitability margins (EBITDA, EBIT, Pre-Tax, Net-Income) being tested individually, as a visualization principle for the mean and the difference among the two analyzed sectors. Subsequently, to test each of the four margins individually under the one-tailed F-test to see the statistical significance of the analysis at an α of .05. This model accounts for variance difference between the two comparison groups. See Table 1 for the descriptive statistics of the Net Profit Margin of the study subjects according to their SIC Code. In the following section, the results of the comparison between subjects, SSRC, and its counterpart will be discussed.

Table 1. Descriptive Statistics of Net Profit Margins of the SSRC and Non-SSRC Groups

	SSRC			Non-SSRC		
Sector	Companies	Mean	Std. Dev.	Companies	Mean	Std. Dev.
Construction[1]	3	6.07%	1.53%	1,964	2.47%	13.20%
Communications and Transportation[2]	42	11.06%	10.3%	4,587	6.24%	16.56%
Retail[3]	4	6.56%	8.25%	1,281	1.71%	4.57%
Financial and Other Services[4]	152	20.65%	12.47%	9,749	13.79%	17.89%
Total	201			17.502		

[1]Specific manufacturing subsectors of the 1500-1700 SIC Codes.
[2]Specific manufacturing subsectors of the 4200-4900 SIC Codes.
[3]Specific manufacturing subsectors of the 5700-5900 SIC Codes.
[4]Specific manufacturing subsectors of the 6700-8000 SIC Codes.

A longitudinal multilevel test was employed to further analyze this hypothesis in terms of the possibility of the effect of time within the two subjects of interest, the SSRC group and its counterpart. The first part of the test was to test the difference in means of the SSRC subject and its Non-SSRC counterpart; subsequently, the longitudinal test was employed to test the significance of the effect of time in this comparison of means at an α of .05.

V. Results

As stated earlier, the dissection of SSRC vs. Non-SSRC was employed to test the first hypothesis, that the operational performance of SSRC is better than the performance of Non-SSRC, testing them as follows:

H1: Achieved recognition for being sustainable and socially responsible is positively related to operational profit long-run performance.

A longitudinal multilevel test was performed for each research variable: EBITDA, EBIT, Pretax, and Net Income, to test whether there is a significant difference among the SSRC, and its Non-SSRC counterpart, providing the following results depicted in Table 2, which summarizes the results of the performance of both study groups with the F-test results for mean comparison and within time performance.

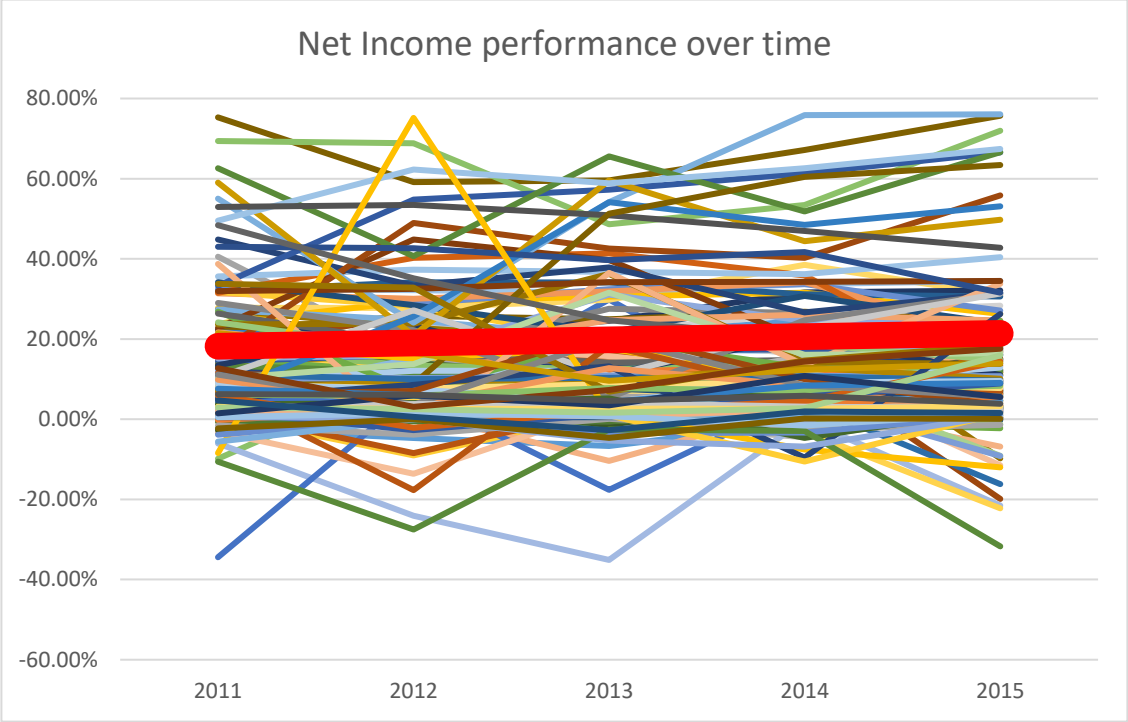
Table 2. Results of the 4 Operative Profit Margins Comparison

		EBITDA	EBIT	Pre-Tax	Net Income
	Mean	42.53%	37.47%	21.94%	17.93%
SSRC:	Std. Dev.	29.60%	29.40%	26.20%	23.12%
	Mean	14.84%	9.91%	1.93%	8.46%
Non-SSRC:	Std. Dev.	579%	582%	782%	20.6%
Mean F-Test		67.67*	73.517*	24.826*	386.995*
Time F-Test		.027+	.024+	.002+	.516+

*Significant at α of 5%; +Not-Significant at α of 5% Results from SPSS and M-Plus

On the four profit margins there is consistency on the results the overall performance is better on the SSRC group than its comparison group. Thereof, the H_1 is accepted for every margin and as a group. Time had no direct effect upon the deployment of the operational profit margins, none of the margins had significance; circumstances when it may be statistical difference due to time interaction would be regarding an unforeseen sales boost or reduction influenced by unforeseen external factors, such as economic, political, or social externalities on a specific region or the entire globe. Although it has no significance, it provides validity to the hypothesis, depicting a standardization of performance within years, because the means were not affected by external economic factors. The following Figure 1 depicts the overall behavior of the Net Income over time for all the participants in this study, summing up 17,712 participants, where the red line depicts that the mean has no significant movement, and it is consistent with the test with no externalities impact.

Figure 1. Overall Net Income Mean Performance over Time.



VI. Discussion

This paper seeks to analyze the relationship of having known reputation for being a sustainable and socially responsible corporation and its operational profit margins within the Service Cluster. The results that arise from this study depict a stable behavior for those corporations that have been awarded as SSRC, and overall better operational performance, while their counterpart shows a lower performance.

The limitations for this study were the availability of one index that contributed real data for the analysis of all the variables. Another limitation was the non-standardization of the accounting principles of the U.S. GAAP and the IFRS norms, and their implications on the results opens an opportunity for future research to test if the results on the present study were affected in part by this situation.

Future research opportunities are open for other clusters and application to businesses requiring evidence that achieving recognition for being SSRC is necessary for their operational performance. Another opportunity is to analyze the country component and the geographical implications for the present study. The Appendix section offers a selection list of countries, which is subject for further research to expand country wise implications on operational performance under the analyzed constraints.

VII. Conclusions

The conclusions that arise from both the Theoretical Framework and the results from the hypothesis analysis are that for a corporation having obtained a sustainable and socially responsible reputation allows such corporations to achieve better operational results, stability, and larger profitability. In accordance to the Stakeholder Theory, and Ibrahim's research, a corporation that does fulfill the requirements of their stakeholders benefits largely from their Sustainable and Socially Responsible Behavior in the Service Cluster (Waddock & Graves, 1997; Ibrahim et al. 2003).

As Margolis et al., stated that CSR and operational performance is related more to accounting measures than market measures (Margolis et al., 2007). Bearing this in mind, this paper fulfills a gap in sustainability and socially responsible research, by testing the impact of achieved reputation and the operational performance of corporations.

The objective of this paper was achieved by the results obtained, that there is a significant relationship with regards to corporations' reputation as having sustainable and socially responsible behavior. Furthermore, the observance of higher operational results at the four profitability levels evidence how much impact corporations can have from being recognized as sustainable and socially responsible, statement that concludes that corporations should benefit from performing under sustainable and ethical constraints, especially in the service cluster.

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CHAPTER 4

Sustainability effect on operational profitability margins in the Automobile and Components Cluster

I. Abstract

This paper aims to determine the usefulness for the automobile and components cluster to follow Sustainability and Social Responsibility Standards in their operations, as well as explain the concepts, and their application for corporations. Since such constraints are more related to accounting measures than market-based measures, the operational profit margins are being analyzed. The methodology includes a dissection of Sustainable and Socially Responsible Corporations (SSRC) and their Non-SSRC counterparts; the paper compares both segments by employing Longitudinal Multilevel Analysis (LME) to identify if there is a positive relationship between sustainable and socially responsible constraints towards operational profit margins. The objective of this paper is to provide empirical evidence that states that corporations not abiding responsible legality, and undergoing sustainable procedures as a means of operating, will see their resulting operational performance worsened by such behavior, as means to motivate them to change their perform basing them under sustainable and socially responsible constraints .

Key Terms: Sustainability, Corporate Social Responsibility, SSRC, Risk, Profit.

JEL Classification: C32, D25, G32, M14, Q01

II. Introduction

Most businesses are opting to enforce and operate under a more societal sustainability, as the advantages are more well known. Company CEOs are driving the forces of going further than traditional CSR and environmental reporting but striking at transforming value chains and the markets they operate in, along with their internal organization (Loorbach et al., 2009). Most shift towards creating more social and economic value where it mitigates negative impacts of production and consumption by primarily making existing systems of production more efficient, and environmentally friendly is seen with more frequency in sectors where major societal changes are occurring or expected to occur. The sectors with more foreseen societal changes are construction, energy, mobility, and food; since they are facing an increased demand for more Sustainable Performance (Loorbach & Wijsman, 2013).

Sustainability has emerged as an evaluation criterion for customers and as a deciding factor for product evaluation. From a consumers' standpoint, it is different to consider a product separately from the corporation. If a corporation claims to use organic cotton, the consumer will choose it depending on taste, feel and fit (Galbreth & Ghosh, 2012). Corporate Social Responsibility as a dimension makes the corporate identity as a company's core identity memorable, but also more anthropomorphic, enabling consumers to identify with it more readily than with others based on more conventional positioning strategies. This statement suggests that sustainability enters the purchase decision–making framework as a distinct and separate dimension. (Du et al., 2007).

The Automobile and Components Cluster is a very competitive sector and Sustainability and Corporate Social Responsibility are becoming important consumer decision-making schemes for purchasing; which opens the following research questions: Are the companies from this cluster utilizing sustainable procedures in their business operations? Are there measurable benefits to their operational profit?

This paper attempts to answer these questions from an academic standpoint. The literature shows that there are two important rationales for operating sustainable: the profit-based and the recognition-based rationales. Both rationales will be explained since there is a gap in the literature related to whether a corporation achieves recognition, and if it will positively impact their operational profitability results.

The objective of this paper is to analyze the sustainability and ethical constraints, by means of a longitudinal multilevel test the relationships and impact that such constraints exert on the operational profit of corporations. The intended contribution of this paper is to provide significant incentive for corporations to operate under sustainable and ethical constraints.

III. Theoretical Framework and Hypothesis Development

One very simple definition for Sustainability is the obligation to conduct ourselves so that we leave to the future the opportunity or the capacity to be as well off as we are, while being a concern in economic growth theory for decades (Solow, 1991). Sustainability has been attributed to the protection of natural resources, and the contribution of a better environment throughout the globe. Recent research suggests that corporate social responsibility (CSR) is institutionalized amongst multinational corporations. Yet, CSR scholarship faces considerable challenges. An agreed definition is lacking, even amongst researchers adopting aligned approaches (Bice, 2017).

The research on these topics is very broad in nature, addressing different areas such as: contaminants (Horisch, 2013), sustainable performance management (Searcy, 2012), sustainability reporting (Kolk, 2013), and the rationale for Sustainability (Schaltegger et al., 2012). The research tries to link their results to one of these two rationales: profit-based or recognition rationales (Schaltegger & Horisch, 2017).

The profit-based rationale is founded on the Capitalist Model of Adam Smith, which states that corporate function must be to seek profits and wealth generation (Smith, 1776). This model is the foundation for most for-profit corporations. Milton Friedman stated: "there is one and only one social responsibility of business to use its resources and engage in activities designed to increase its profits so long as it stays within the rules of the game" (Friedman, 1970). Furthermore, Albert Carr states that the only social responsibility that a Corporation has is to obey the law (Carr, 1996). This model states that profits must be legally earned but does not point out the ethical extent.

Armstrong and Green have argued that there are not enough rewards for corporations to undergo and perform socially responsibly; suggesting that irresponsible behavior is present by choice, since corporations find no incentive or reward enough to perform in an ethically responsible way. The implementation is costly, and there is no fiscal incentive to undergo strict policies to protect the environment under legality (Armstrong & Green, 2013). Furthermore, some Corporate Officials believe that philanthropy is the method to reduce their wrongful doings affecting the environment and Society in general (Du X. , 2015). Unfortunately, philanthropic efforts are tax-deductible; making them a bifold effort, relieving some of the damage caused by a corporation and obtaining a tax benefit, which does incentivize such corporations to do the bare minimum if there is the philanthropic scape goat.

The recognition-based rationale is founded on legitimacy theory. This theory establishes the relevance of organizational legitimacy for corporate survival while stating how to combine corporate goals with society's goals (Dowling & Pfeffer, 1975). As Deegan states, this corporate rationale seeks legitimacy as means to solve reputation issues with society and increase their brand value (Deegan, 2002). This reasoning is behind the large corporations' motivation for obtaining quality certifications to prove stakeholders that they follow international standards and are seeking to undergo sustainable processes (Zhu, et al. 2013).

Schaltegger and Horisch have concluded in a transversal study that large corporations employ sustainable procedures to achieve legitimacy; therefore, their motivation for Sustainability enforcement is based on the recognition-based rationale. This has different implications, that current management still disputes between the profit-based and the recognition-based rationales. The final statement is that most stockholders have not grasped the benefits of being a sustainable company towards a positive profit maximization (Schaltegger & Horisch, 2017).

The Stakeholder Theory considered as being the theoretical foundation for CSR states that it is necessary to answer to all the corporations' stakeholders in terms of their needs and requirements in order to guarantee success (Waddock & Graves, 1997). Furthermore, Sweetin et al. suggest through an analysis of consumer behavior that customers will punish/reward corporations according to their behavior towards the bad/good reputation about being responsible. The basic psychology involved is that customers willfully will punish bad reputation by not acquiring the whole brand, not only the infamous specific product (Sweetin et al., 2013).

McGuire et al. stated that CSR and operational performance "are related with accounting-based measures more than with market-based indicators" (McGuire, et al., 1988). From such statement is inferred that CSR performance is more operational-based than market-based. Therefore, a Sustainable and Socially Responsible behavior must be guided towards achieving operational benefits and leverage.

Another consideration is the time for evaluation, as Meuse and Dai stated, since economic conditions are not controlled, a logical argument might be that negative or positive outcomes reflect the state of the general economy. They have added that their data was collected purposely during a time of continuous economic growth to ascertain whether previous findings could be replicated (Meuse & Dai, 2013). Such statement shows that time performance is an important consideration for any study.

Based on the Stakeholder Theory and on Schaltegger & Horisch research, a corporation must fulfill all stakeholders' needs, and that corporations' reputation will further expand their profitability margins (Waddock & Graves, 1997; Schaltegger & Horisch, 2017); and considering Meuse and Dai's time performance for evaluation (Meuse & Dai, 2013). The present study, through a series of longitudinal multilevel techniques, will analyze whether achieved reputation of being sustainable and socially responsible provides higher operational profit results for the recognized corporations with sustained performance in time. Within this study, the operational profit margins, deemed as the EBITDA, EBIT, Pre-Tax, and Net Income, are forecasted to be better for the corporations with the reputation of being sustainable and socially responsible than for their counterpart without such recognition. Therefore, the hypothesis is formulated as:

H1: Achieved recognition for being sustainable and socially responsible is positively related to operational profit long-run performance.

IV. Data and Methodology

This paper studies the relationship that exists between Sustainability and Social Responsibility recognition towards the operational profitability margins by means of comparison between corporations that have achieved recognition for being sustainable and socially responsible versus their competition that have not been awarded as sustainable nor socially responsible. The Dow Jones Sustainability Index was utilized to distinguish which corporations are recognized as sustainable and socially responsible. The Automobile and Components Cluster will be the industrial sector for the analysis, since their business processes involve a very similar structure in terms of operational performance.

A. Sample and Variable Definition

The Dow Jones Sustainability Index awards corporations with recognition of sustainable and socially responsible operational performance. This index is composed of corporations that are publicly traded globally within the Dow Jones Stock Market, including only those corporations that have been awarded with a high evaluation of being at the top 10% best performance of their correspondent industrial sector, as the measure for being recognized within this index (S&P Dow Jones, 2016). This index provides the specific cut point used to compare the performance of the top 10%, in terms of Sustainability and Social Responsibility, versus its underperforming 90% counterpart of the manufacturing sector.

Subsequently, in order to compare the operational profitability performance of the Sustainable and Socially Responsible Corporations (SSRC) with its (Non-SSRC) counterparts, the Compustat Global Financial Database was employed to acquire the relevant data deemed specific for this study (Standard & Poor's/Compustat, 2017). The analysis was condensed in the Automobile and Components Cluster from such database utilizing the specific Standard Industrial Classification (SIC) Codes for such cluster, utilizing the 3700's Codes.

The study focuses on the data obtained from the corporations in the Cluster at stake, utilizing their fiscal years ranging from 2011 through 2015, five years from each Corporation. The database gave as a result the availability of information from 635 Corporations. However, the research had to eliminate some Corporations, based on the following Criteria:

a) Due to the nature of being a worldwide research, with available data from 59 countries, the US corporations follow the U.S. GAAP normative, while the majority of the remainder countries use the IFRS normative; despite these accounting rules having substantial differences between each other for this study, it is relevant to point out that the operational profit margins are for comparison purposes and a standardization of such accounting principles is not available to the researcher. Furthermore, for the study to be accurate without dealing with different exchange rates to convert to a specific currency, and the empirical difference of numerical amounts of income and profit; the study was deemed to be based upon their EBITDA, EBIT, Pre-Tax, and Consolidated Net Income Margins to standardize the overall performance for the entirety of the Corporations.

b) Lack of financial figures on a specific operational profit margin, which will not allow the study to have substantial availability of data, specifically to obtain the operational profit margins.

c) Under-reporting, Corporations that had insufficient information for at least 4 years to standardize the study.

d) After running the database without the above-mentioned criterions, outliers pertaining to the 1 and 99 percentiles were eliminated from the study, mainly due to errors found on the database or misrepresentation of data, in such cases where the margins became outliers such as +/- 100%, there was no significant difference in the means of both pre-and-post criterion performance. (Fitza, 2014; Quigley & Graffin, 2016).

The final database was subsequently segmented into Sustainable and Socially Responsible Corporations (SSRC) accounting for 15 Corporations, and Non-Sustainable or Socially Responsible Corporations (Non-SSRC) 550 Corporations; totaling 565 Corporations. See Table 1 for the descriptive statistics of the sample members' net profit margin.

Table 1. Descriptive Statistics of Net Profit Margins of the SSRC and Non-SSRC Groups

	SSRC			Non-SSRC		
Sector	Companies	Mean	Std. Dev.	Companies	Mean	Std. Dev.
Automobile and Components[1]	15	5.9%	5.1%	550	4.1%	10.9%
Total	15			550		

[1]Specific manufacturing subsectors of the 3700 SIC Codes.

B. Procedure

The hypothesis was analyzed with the use of SPSS 22 Statistical software (IBM Corp., 2013). The following model was employed to test the hypothesis:

H1: To empirically test this hypothesis the intention was to obtain the mean of the SSRC and its Non-SSRC counterpart, for each one of the four profitability margins (EBITDA, EBIT, Pre-Tax, Net-Income) being tested individually, as a visualization principle for the mean and the difference among the two analyzed sectors. Subsequently, testing each of the four margins individually under the one-tailed F-test to see the statistical significance of the analysis at an α of .05. This model accounts for variance difference between the two comparison groups. A longitudinal multilevel test was employed to further analyze this hypothesis in terms of the possibility of the effect of time within the two subjects of interest, the SSRC group and its counterpart. The first part of the test was to test the difference in means of the SSRC subject and its Non-SSRC counterpart; subsequently, the longitudinal test was employed to test the significance of the effect of time in this comparison of means at an α of .05.

V. Results

As stated earlier, the dissection of SSRC vs. Non-SSRC was employed to test the first hypothesis that the financial performance of SSRC is better than the performance of Non-SSRC, testing them as follows:

H1: Achieved recognition for being sustainable and socially responsible is positively related to operational profit long-run performance.

A longitudinal multilevel test was performed for each research variable: EBITDA, EBIT, Pretax, and Net Income, to test whether there is a significant difference among the SSRC, and its Non-SSRC counterpart, providing the following results depicted on Table 2, which summarizes the results of the performance of both study groups with the F-test results for mean comparison and within time performance.

Table 2. Results of the 4 Operative Profit Margins Comparison

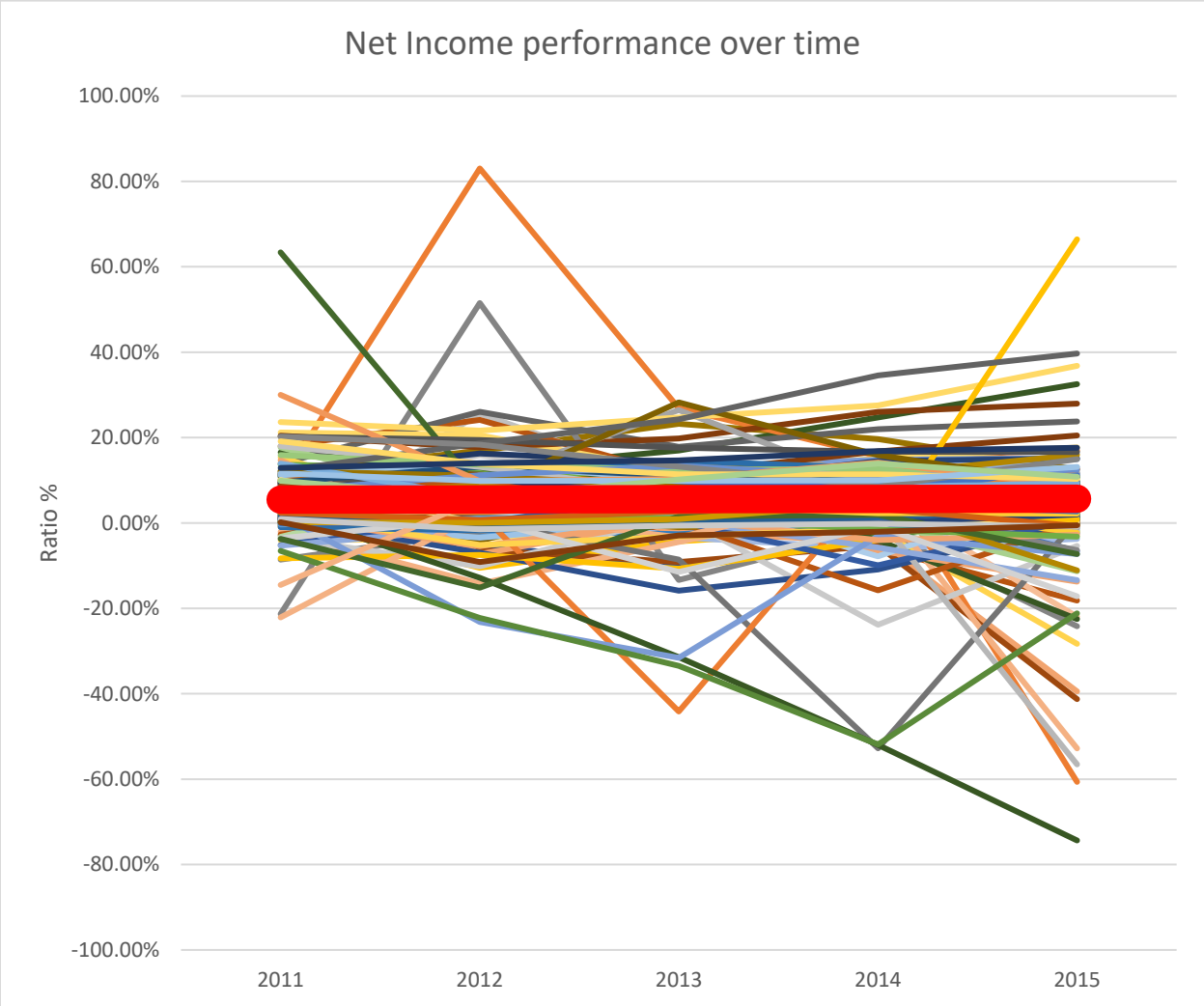
		EBITDA	EBIT	Pre-Tax	Net Income
	Mean	11.6%	7.9%	8.3%	5.9%
SSRC:	Std. Dev.	8.9%	4.2%	6.1%	5.1%
	Mean	10.8%	6.4%	6.3%	4.1%
Non-SSRC:	Std. Dev.	8.9%	8.9%	11.5%	10.9%
Mean F-Test		2.627^{+}	4.637^{*}	7.328^{*}	8.439^{*}
Time F-Test		0.2^{+}	0.4^{+}	0.4^{+}	0.2^{+}

*Significant at α of 5%; $^{+}$Not-Significant at α of 5% Results from SPSS and M-Plus

On all four cases there is consistency on the results, the overall operational profitability performance is better on the SSRC segment than its counterpart. Although the EBITDA margin had no statistical difference, due to the closeness in the cost structure of this Industrial Cluster. Therefore, the H_1 is accepted collectively as a group. Time had no direct effect upon the development of the operational profit margins on the four margins there was no significant difference, which works accordingly to each corporation's operational profitability performance because they behave similarly on their activities within their industry; reasons where it may be statistically different due to time interaction would be regarding economic, political, or social externalities on a specific region or the entire globe.

This situation works in favor of the hypothesis, depicting a standardization of performance within years, providing validity because the means were not affected by external factors. The following Figure 1 depicts the overall behavior of the Net Income over time for all the participants in this study, both the SSRC and its counterparts totalizing 565 participants, where the red line depicts that the mean has no significant movement and it is consistent with the test and no externalities impact.

Figure 1. Overall Net Income Mean Performance over Time.



VI. Discussion

This paper seeks to explore the relationship between the achieved recognition of being sustainable and socially responsible, and the operational profitability margins within a very homogeneous Cluster. The results that arise from this study depict a consistent behavior for those corporations that have achieved the status of being SSRC and overall better operational performance while its counterpart shows a lower performance.

The limitations for this study were the availability of one index that contributes real data for the analysis of all the variables. Another limitation was the non-standardization of the accounting principles of the U.S. GAAP and the IFRS norms and their implication on the results open an opportunity for future research to test if the results on the present study was affected in part by this situation.

Future research opportunities are open for other clusters and application to businesses requiring evidence that achieving recognition for being SSRC is necessary for their operational performance. Additionally, the opportunity to measure it by countries opens another future research opportunity for the present study.

VII. Conclusions

The conclusions that arise from both the Theoretical Framework and the results from the hypothesis is that having a recognized sustainable and socially responsible corporations' performance allows such corporations to have significantly better operational results, stability, and allows them to outperform its counterpart. In accordance to the Stakeholder Theory, and the conjunction of the profit-based and the recognition-based rationale offer better results for a corporation that does fulfill the requirements of their stakeholders will benefit largely from their Sustainable and Socially Responsible Behavior (Waddock & Graves, 1997; Schaltegger & Horisch, 2017).

As McGuire et al. have stated, CSR and operational performance "are related with accounting-based measures than with market-based indicators" (McGuire, et al., 2003). Bearing this in mind, this paper fulfills a gap in sustainability and socially responsible research, where it tests the impact of achieved recognition and the operational performance of corporations with long-run implications, since economic externalities were not present (Meuse & Dai, 2013).

The objective of this paper was achieved by the results obtained, that there is a significant relationship with regards of corporations recognized sustainability and socially responsible behavior. Furthermore, the observance of higher operational results at the four profitability levels evidence how much impact corporations allocate from being recognized as sustainable and socially responsible, statement that concludes that corporations should benefit from performing under sustainable and ethical constraints. The intended contribution was fulfilled by providing empirical evidence to unrecognized companies, that if they persist in such manner their operational profit margins will be lower and bad reputation will be attained, which is an overall combination that most corporations throughout industrial sectors cannot afford.

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CHAPTER 5

SEM Analysis on Global Fortune 500 Corporations with Green Ratings

I. Abstract

This paper aims to determine the relationships, if any, between the green ratings, deemed as eco-efficiency by employing a Structural Equations Model (SEM) to determine the relationship between the Newsweek Green Rankings and the Global Fortune 500 Corporations. The methodology includes the analysis of four sustainability variables and four social responsibility variables evaluated in the Newsweek Green Rankings to study if there is a relationship between the implementation of such variables and the operational profitability performance and the possibility of the reduction of adverse risk effects in their continued operations. The objective of this paper is to provide empirical evidence that states to show the benefit of implementing eco-efficiency variables in their operations.

Key Terms: Sustainability, Corporate Social Responsibility, Green Rankings, Risk, Profit.

JEL Classification: C32, D25, G32, M14, Q01

II. Introduction

Sustainability and Corporate Social Responsibility (CSR) are topics with a different array of subtopics that have been analyzed by different authors. Different researches have had divergent outcomes; some proving a positive relationship between Sustainability and CSR variables, and operational profits or investments. On the other hand, some studies have shown a negative or non-significant relationship between such variables and operational performance. There are many aspects to analyze in these relationships, which is one of the reasons for the mixed results (Baird et al., 2012).

The relationship between enforcement of improved ethical social behavior and a better financial outcome has shown to have a positive coefficient (van Beurden & Gossling, 2008; Roman et al., 1999; Asif et al., 2011). However, on the other hand, there are specific studies that have proven that this relationship is negative due to an increase in the cost structure for several corporations (Marom, 2006; Hillman & Keim, 2001; Statman, 2000). Among the different variables being analyzed is what is deemed as eco-efficiency ratings or green ratings, and their relationship to operational profit; this paper attempts to state if such relationships exist.

The present research analyzes the context of the Global Fortune 500 Index, by means of a Structural Equations Model (SEM) attempting to understand the relationships that exist between the components of the green ratings and profitability and risk within these global sample of corporations from the Newsweek Green Rankings.

III. Theoretical Framework and Hypotheses Development

The Stakeholder Theory, considered as being the theoretical foundation for Social Responsibility, states that it is necessary to answer to all the corporations' stakeholders in terms of their needs and requirements in order to guarantee success (Waddock & Graves, 1997). And considering that the United Nations have stated that Sustainability is meeting today's needs without limiting future generations' availability of resources (United Nations, 1993). Depicted from this Theory is the necessity for the conservation of resources for future generations, which is the basis for eco-efficiency; basically, the means for environmental preservation.

Sinkin et al. (2008) described eco-efficiency as the process of maximizing profits while reducing the impact to the environment, by waste reduction and energy savings all of this with improved results for the obtention of economic benefits. Furthermore, Derwall et al. (2005) stated that corporations with high-ranking in eco-efficiency ratings produce a substantial increase in asset development. From such statements, there is an entailed relationship between the management of environmental resources and socially responsible factors that provide economic benefits.

Another important aspect for most corporations is the risk involved in their business operations. As stated by Karma & Sanders (2006), most corporations attempt to reduce external risk by operational leverage, a situation that aims to provide security for the investments. Van den Venter et al. (2012) stated risk is present in several economic decisions, their analysis has seen a link between psychological factors and the amount of risk toleration that individuals and corporate decision makers can handle.

In recent years, banks worldwide are aware that they need to increase their social and environmental responsibilities as a method to reduce their risk as lenders (De la Cuesta et al., 2006). This statement shows that there is a substantial increment in the need for corporations to achieve a high rating in eco-efficiency for them to perform their business operations.

The Stakeholder Theory states that the fulfillment of the stakeholders' needs has a strong relationship with business success (Waddock & Graves, 1997). And Sinkin et al. (2008) describe eco-efficiency as the process of maximizing profits while reducing the impact to the environment, for waste reduction all of this with improved results for the obtention of economic benefits. Consider, as well, that the previous research tested the linkage between the eco-efficiency ratings and market-based benefits to firm value. In this paper, the foregoing analysis will test the relationships of eco-efficiency ratings, and operational profit performance and risk, using SEM that analyzed the following hypotheses:

1) The dependent manifest variable has been deemed to be the Net Profit Margin, while sustainable and socially responsible components of green ratings plus risk are the independent manifest variables

   H1: Green Ratings and Risk are related to Operational Profit Performance.

2) The dependent manifest variable has been deemed to be the Risk, while sustainable and socially responsible components of green ratings are the independent manifest variables.

   H2: Green Ratings are related to Operational Risk.

On both hypotheses, corporate size was the control variable, as commonly accepted in this type of research (Waddock & Graves, 1997; Stanwick & Stanwick, 1998; Baird et al., 2012).

IV. Data and Methodology

The Newsweek Green Rankings Index (NGR) details the eco-efficiency ratings as it will be used to establish the relationships between the rankings, and operational profitability margins and the management of operational risk. According to the NGR methodology, the Global Fortune 500 Corporations was employed to limit the sample size; since, the corporations listed are of similar size and global outreach. Furthermore, for this research, the operational performance information, specific to profit and risk, was obtained from the Compustat Global Database (Standard & Poor's/Compustat, 2017). The NGR categorizes its ratings into the following classifications found on Table 1: Sustainable: Energy Productivity, Carbon Productivity, Water Productivity, and Waste Productivity; Socially Responsible: Reputation, Equal Pay, Regulation Committee, and Audit Access (Newsweek, 2014-16). Risk was determined as the volatility found in such corporations in their EBITDA Ratio. The Control Variable specific for this study was the corporation size determined by the logarithm of number of employees.

Table 1. Newsweek Green Rankings Description

Newsweek Green Rankings	
	Description
Sustainable:	
Energy Productivity	Energy Consumption Efficiency
Carbon Productivity	Reduction of Carbon Emissions
Water Productivity	Restoration of Water Supplies
Waste Productivity	Reduction of Pollutants' harmful wastes
Socially Responsible:	
Reputation	Achieved Reputation of Social Responsibility Efforts
Equal Pay	Proven efforts to pay equally regardless of human conditions
Regulation Committee	Management commitment to foster S.R. Behavior
Audit Access	Ease of Access to audit S.R. performance

Source: Newsweek, 2014-16

A. Sample and Variable Definitions

The time frame for this study was the given from 2014 through 2016, due to the lack of access to the previous years while having a substantial change in methodology for the following years. The sample is integrated by 611 corporations, from around the world, as a standardization process for the three years' results. See Table 2 for the descriptive statistics of the sample member's net profit margin by country. On the table, it is evidenced that the sample of corporations have a uniform Net Profit performance that ranges from 1.16% to 10.52%, with an atypical data of 26.75%, and an overall mean of 5.33%.

Table 2. Descriptive Statistics of Sample's Net Profit Margin

Country	Corp.	Mean	Std. D.	Kurtosis	Std. E. of Kurtosis
Australia	10	3.77%	2.37%	1.547	0.833
Belgium	2	2.83%	2.04%	0.516	1.741
Brazil	9	8.11%	9.33%	0.550	0.872
Canada	22	5.50%	4.97%	13.366	0.582
China	54	4.12%	3.78%	10.051	0.379
Colombia	1	4.33%	0.58%	-	-
Denmark	3	2.56%	1.81%	(1.222)	1.400
Finland	3	2.22%	2.44%	(2.385)	1.400
France	27	4.22%	3.52%	1.176	0.529
Germany	23	5.71%	4.56%	2.065	0.570
Hong Kong	16	6.88%	5.35%	1.198	0.674
India	12	4.06%	3.43%	1.066	0.768
Indonesia	3	4.89%	3.52%	(1.635)	1.400
Ireland	7	4.10%	4.39%	1.172	0.972
Israel	1	1.67%	0.58%	-	-
Italy	8	3.54%	2.77%	(0.205)	0.918
Japan	42	6.11%	5.50%	2.049	0.428
Luxembourg	2	3.00%	3.29%	(3.333)	1.741
Macau	2	1.83%	0.75%	(0.104)	1.741
Malaysia	1	7.33%	0.58%	-	-
Mexico	6	6.78%	6.64%	2.770	1.038
Netherlands	8	4.71%	2.94%	2.817	0.918
Nigeria	1	5.00%	0.00%	-	-
Norway	3	7.67%	5.29%	(1.341)	1.400
Qatar	2	5.50%	6.02%	(3.333)	1.741
Russia	10	3.67%	4.33%	3.150	0.833

Saudi Arabia	4	4.50%	3.29%	(1.897)	1.232
Singapore	5	4.13%	2.00%	1.651	1.121
South Africa	4	8.58%	2.75%	0.449	1.232
South Korea	7	6.52%	8.05%	2.223	0.972
Spain	9	10.52%	21.90%	11.981	0.872
Sweden	12	7.36%	14.63%	14.235	0.768
Switzerland	16	5.29%	6.26%	4.921	0.674
UK	38	5.32%	4.23%	5.187	0.449
USA	234	5.02%	7.34%	42.471	0.184
Venezuela	4	26.75%	22.04%	(1.976)	1.232
Total	**611**	5.33%	7.15%	46.719	0.114

Source: Newsweek Green Rankings Members, profitability info from the Compustat Global Financial DB.

B. Method

The stated hypotheses were analyzed with the use of the lavaan and semplot libraries within R Statistical software (R Core Team, 2013). Due to the nature of this study being a worldwide research, to be accurate without dealing with different exchange rates, all specific currencies of profit margins were not converted and utilized in their percentage form.

Bearing this in mind, the following models where employed to test the hypotheses:

"The overall objective of structural equation modeling (SEM) is to establish that a model derived from theory has a close fit to the sample data in terms of the difference between the sample and model-predicted covariance matrices" (Dion, 2008). Using this methodology, the study can be modeled in such a way that each individual relationship can be graphically identified, as seen in Figure 1, and the specific constraints being analyzed are in Table 3.

Figure 1. Structural Equations Model

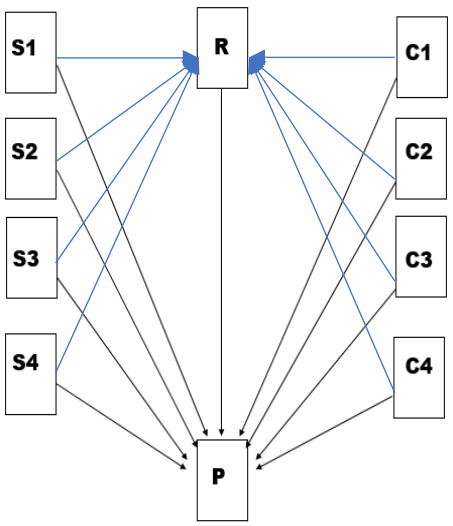

Table 3. Structural Equations Model Variables

Figure 1. Manifest Variables	
R: Risk	
Sustainability Factors:	*Socially Responsible Factors:*
S1: Energy Productivity	C1: Reputation
S2: Carbon Productivity	C2: Equal Pay
S3: Water Productivity	C3: Regulation Committee
S4: Waste Productivity	C4: Audit Access
P: Net Profit Margin	
LS: Control Variable: *Log* of Employees Number	

The present study is represented in terms of the foreseen interactions, where the eight categories ratings are being graphed and their interaction among each other are as manifest variables in terms of the dependent variables.

Due to the transversal nature of this statistical test, each of the three years must be analyzed independently, and subsequently compared collectively. For such procedure, see the correlations that utilizes the control variable for each year on Tables 4-6.

Table 4. Correlations for year 2014

	***LS*[1]**	***S1*[2]**	***S2*[3]**	***S3*[4]**	***S4*[5]**	***C1*[6]**	***C2*[7]**	***C3*[8]**	***C4*[9]**	***R*[10]**	***P*[11]**
***LS*[1]**	1.000										
***S1*[2]**	0.075	1.000									
***S2*[3]**	0.015	0.692	1.000								
***S3*[4]**	(0.009)	0.380	0.347	1.000							
***S4*[5]**	(0.003)	0.198	0.239	0.260	1.000						
***C1*[6]**	(0.186)	0.015	0.064	0.033	0.059	1.000					
***C2*[7]**	0.058	0.114	0.209	0.077	0.039	(0.186)	1.000				
***C3*[8]**	0.104	0.212	0.287	0.090	0.072	(0.141)	0.391	1.000			
***C4*[9]**	0.141	0.208	0.248	0.096	0.048	(0.159)	0.358	0.483	1.000		
***R*[10]**	(0.012)	0.023	(0.008)	0.030	(0.010)	0.012	0.005	0.057	0.043	1.000	
***P*[11]**	0.032	0.024	0.046	(0.047)	(0.042)	(0.014)	0.008	0.021	0.068	0.015	1.000

[1]Log. # Employees (Corporate Size); [2]Energy Productivity; [3]Carbon Productivity; [4]Water Productivity; [5]Waste Productivity;
[6]Reputation; [7]Equal Pay; [8]Regulation Committee; [9]Audit;
[10]Risk; [11]Net Profit

Table 5. Correlations for year 2015

	***LS*[1]**	***S1*[2]**	***S2*[3]**	***S3*[4]**	***S4*[5]**	***C1*[6]**	***C2*[7]**	***C3*[8]**	***C4*[9]**	***R*[10]**	***P*[11]**
***LS*[1]**	1.000										
***S1*[2]**	0.076	1.000									
***S2*[3]**	0.015	0.604	1.000								
***S3*[4]**	0.052	0.305	0.304	1.000							
***S4*[5]**	0.044	0.192	0.211	0.166	1.000						
***C1*[6]**	0.046	0.021	0.029	(0.006)	(0.015)	1.000					
***C2*[7]**	0.147	0.214	0.285	0.084	0.066	(0.061)	1.000				
***C3*[8]**	0.182	0.209	0.274	0.131	0.057	(0.098)	0.608	1.000			
***C4*[9]**	0.183	0.252	0.239	0.132	0.080	(0.091)	0.508	0.483	1.000		
***R*[10]**	(0.053)	(0.030)	(0.007)	(0.068)	(0.022)	(0.002)	0.029	(0.021)	0.031	1.000	
***P*[11]**	0.043	0.056	0.050	0.053	0.062	0.013	(0.006)	(0.032)	0.034	0.008	1.000

[1]Log. # Employees (Corporate Size); [2]Energy Productivity; [3]Carbon Productivity; [4]Water Productivity; [5]Waste Productivity; [6]Reputation; [7]Equal Pay; [8]Regulation Committee; [9]Audit; [10]Risk; [11]Net Profit

Table 6. Correlations for year 2016

	***LS*[1]**	***S1*[2]**	***S2*[3]**	***S3*[4]**	***S4*[5]**	***C1*[6]**	***C2*[7]**	***C3*[8]**	***C4*[9]**	***R*[10]**	***P*[11]**
***LS*[1]**	1.000										
***S1*[2]**	0.091	1.000									
***S2*[3]**	(0.031)	0.580	1.000								
***S3*[4]**	0.030	0.358	0.331	1.000							
***S4*[5]**	(0.013)	0.174	0.167	0.205	1.000						
***C1*[6]**	0.045	0.035	0.060	(0.029)	(0.028)	1.000					
***C2*[7]**	0.123	0.200	0.198	0.090	0.003	(0.079)	1.000				
***C3*[8]**	0.163	0.217	0.243	0.163	0.051	(0.118)	0.617	1.000			
***C4*[9]**	0.162	0.273	0.219	0.193	0.096	(0.072)	0.541	0.500	1.000		
***R*[10]**	0.057	0.029	(0.046)	(0.035)	(0.056)	0.032	(0.058)	(0.018)	0.008	1.000	
***P*[11]**	0.045	0.031	(0.027)	(0.014)	0.015	0.022	0.036	0.000	0.045	0.012	1.000

[1]Log. # Employees (Corporate Size); [2]Energy Productivity; [3]Carbon Productivity; [4]Water Productivity; [5]Waste Productivity; [6]Reputation; [7]Equal Pay; [8]Regulation Committee; [9]Audit; [10]Risk; [11]Net Profit

V. Results

After obtaining the correlation tables for each year including the allocated corporate size, determined by the *Log* of their employees number, two different SEMs were obtained to test H1 (Tables 7, 8, and 9) and H2 (Tables 10, 11, and 12). The six SEM tables have validity, since all of them pass their fit test with a *p*-value with an α of .05. The following statements detail the data obtained from testing the H1 - Green Ratings and Risk are related to Operational Profit Performance:

The results of year 2014 for the H1 (Table 7) show that the nine relationships tested are statistically significant with three positive and six negative coefficients: The positive coefficients relationships entail that per every monetary unit invested in $S1_{(\text{Energy Productivity})}$, and $S2_{(\text{Carbon Productivity})}$, $P_{(\text{Profit})}$ increases by the depicted coefficients of .359 for *S1*, and .828 for *S2*; while the relationship with $R_{(\text{Risk})}$ is that per every unit that EBITDA $R_{(\text{Risk})}$ increases, $P_{(\text{Profit})}$ increases by .078. The remaining relationships have a negative coefficient, that entails that per every monetary unit invested in $S3_{(\text{Water Productivity})}$, $S4_{(\text{Waste Productivity})}$, $C1_{(\text{Reputation})}$, $C2_{(\text{Equal-Pay})}$, $C3_{(\text{Regulation})}$, and $C4_{(\text{Audit})}$; $P_{(\text{Profit})}$ decreases by the depicted coefficients of -.850 for *S3*, -.068 for *S4*, -.059 for *C1*, -.059 for *C2*, -.168 for *C3*, -.067 for *C4*.

Table 7. H1 Test for year 2014

	Regressions		
Relationship	*Estimate*	*Std. Err*	*z-value*
$P_{(\text{Profit})}$~$S1_{(\text{Energy Productivity})}$	0.359	0.021	16.817*
$P_{(\text{Profit})}$~$S2_{(\text{Carbon Productivity})}$	0.828	0.022	37.784*
$P_{(\text{Profit})}$~$S3_{(\text{Water Productivity})}$	-0.850	0.022	-38.627*
$P_{(\text{Profit})}$~$S4_{(\text{Waste Productivity})}$	-0.068	0.020	-3.415*
$P_{(\text{Profit})}$~$C1_{(\text{Reputation})}$	-0.059	0.020	-3.006*
$P_{(\text{Profit})}$~$C2_{(\text{Equal Pay})}$	-0.059	0.021	-2.781*
$P_{(\text{Profit})}$~$C3_{(\text{Regulation})}$	-0.168	0.023	-7.305*
$P_{(\text{Profit})}$~$C4_{(\text{Audit})}$	-0.067	0.026	-2.628*
$P_{(\text{Profit})}$~$R_{(\text{Risk})}$	0.078	0.022	3.600*
Fit Test			0.000*
X^2			0.000*
RMSEA			1.000*

**P-value* significant at an α of .05.

The results of year 2015 for the H1 Test (Table 8) evidence that the nine relationships tested are non-statistically significant with seven positive coefficients and two negative coefficients. The positive relationships entail that per every monetary unit invested in $S1_{(\text{Energy Productivity})}$, $S2_{(\text{Carbon Productivity})}$, $S3_{(\text{Water Productivity})}$, $S4_{(\text{Waste Productivity})}$, $C1_{(\text{Reputation})}$ and $C4_{(\text{Audit})}$, $P_{(\text{Profit})}$ shall increase by the depicted coefficients of .026 for *S1*, .023 for *S2*, .034 for *S3*, .047 for *S4*, .010 for *C1*, .052 for *C4*; while the relationship with $R_{(\text{Risk})}$ is that per every unit that EBITDA $R_{(\text{Risk})}$ increases, $P_{(\text{Profit})}$ increases by .009. The remaining relationships: $P_{(\text{Profit})}$~$C2_{(\text{Equal-Pay})}$ and $P_{(\text{Profit})}$~$C3_{(\text{Regulation})}$ have a negative coefficient, that entails that per every monetary unit invested in $C2_{(\text{Equal-Pay})}$ and $C3_{(\text{Regulation})}$; $P_{(\text{Profit})}$ decreases by the depicted coefficients of -.007 for *C2*, -.070 for *C3*.

Table 8. H1 Test for year 2015

	Regressions		
Relationship	*Estimate*	*Std. Err*	*z-value*
$P_{(\text{Profit})}$~$S1_{(\text{Energy Productivity})}$	0.026	0.052	0.506
$P_{(\text{Profit})}$~$S2_{(\text{Carbon Productivity})}$	0.023	0.053	0.430
$P_{(\text{Profit})}$~$S3_{(\text{Water Productivity})}$	0.034	0.043	0.787
$P_{(\text{Profit})}$~$S4_{(\text{Waste Productivity})}$	0.047	0.041	1.139
$P_{(\text{Profit})}$~$C1_{(\text{Reputation})}$	0.010	0.041	0.250
$P_{(\text{Profit})}$~$C2_{(\text{Equal Pay})}$	-0.007	0.054	-0.138
$P_{(\text{Profit})}$~$C3_{(\text{Regulation})}$	-0.070	0.053	-1.328
$P_{(\text{Profit})}$~$C4_{(\text{Audit})}$	0.052	0.049	1.063
$P_{(\text{Profit})}$~$R_{(\text{Risk})}$	0.009	0.040	0.234
Fit Test			0.000*
X^2			0.000*
RMSEA			1.000*

**P-value* significant at an α of .05.

The results of year 2016 for the H1 Test (Table 9) evidence that the nine relationships tested are non-statistically significant with six positive coefficients and three negative coefficients. The positive relationships entail that per every monetary unit invested in $S1_{(\text{Energy Productivity})}$, $S4_{(\text{Waste Productivity})}$, $C1_{(\text{Reputation})}$, $C2_{(\text{Equal-Pay})}$ and $C4_{(\text{Audit})}$, $P_{(\text{Profit})}$ increases by the depicted coefficients of .063 for *S1*, .017 for *S4*, .024 for *C1*, .042 for *C2*, .017 for *C4*; while the relationship with $R_{(\text{Risk})}$ is that per every unit that EBITDA $R_{(\text{Risk})}$ increases, $P_{(\text{Profit})}$ increases by .009. The remaining relationships: $P_{(\text{Profit})}$~$S2_{(\text{Carbon Productivity})}$; $P_{(\text{Profit})}$~$S3_{(\text{Water Productivity})}$ and $P_{(\text{Profit})}$~$C3_{(\text{Regulation})}$ have a negative coefficient, that entails that per every monetary unit invested in $S2_{(\text{Carbon Productivity})}$, $S3_{(\text{Water Productivity})}$ and $C3_{(\text{Regulation})}$; $P_{(\text{Profit})}$ decreases by the depicted coefficients of -.068 for *S2*, -.022 for *S3* and , -.022 for *C3*.

Table 9. H1 Test for year 2016

	Regressions		
Relationship	*Estimate*	*Std. Err*	*z-value*
$P_{(\text{Profit})}$~$S1_{(\text{Energy Productivity})}$	0.063	0.052	1.215
$P_{(\text{Profit})}$~$S2_{(\text{Carbon Productivity})}$	-0.068	0.051	-1.344
$P_{(\text{Profit})}$~$S3_{(\text{Water Productivity})}$	-0.022	0.045	-0.501
$P_{(\text{Profit})}$~$S4_{(\text{Waste Productivity})}$	0.017	0.042	0.419
$P_{(\text{Profit})}$~$C1_{(\text{Reputation})}$	0.024	0.041	0.598
$P_{(\text{Profit})}$~$C2_{(\text{Equal Pay})}$	0.042	0.055	0.755
$P_{(\text{Profit})}$~$C3_{(\text{Regulation})}$	-0.039	0.054	-0.725
$P_{(\text{Profit})}$~$C4_{(\text{Audit})}$	0.044	0.051	0.874
$P_{(\text{Profit})}$~$R_{(\text{Risk})}$	0.009	0.041	0.192
Fit Test			0.000*
X^2			0.000*
RMSEA			1.000*

**P-value* significant at an α of .05.

If taken individually by year, the specific results from each year are mixed. The only year with statistical significance throughout the nine specific variables was 2014; while, the remaining two do not achieve statistical significance. The coefficients from year 2014 lean towards an overall negative relationship; while, the remaining two years' coefficients lean towards an overall positive relationship.

The following statements detail the data obtained from the test of the H2 - Green Ratings are related to Operational Risk:

The results of year 2014 for the H2 Test (Table 10) are mixed for the eight relationships tested with five negative coefficients and three positive coefficients. The negative coefficient entails that per every monetary unit invested in $S1_{(\text{Energy Productivity})}$, $S2_{(\text{Carbon Productivity})}^{*}$, $S4_{(\text{Waste Productivity})}$; $C2_{(\text{Equal-Pay})}^{*}$, and $C3_{(\text{Regulation})}$; $R_{(\text{Risk})}$ decreases by the depicted coefficients of -.073 for *S1*, -.111 for *S2*, -.111 for *S3*, -.003 for *S4*, -.113 for *C2*, -.127 for *C3*. The remaining relationships: $R_{(\text{Risk})}$~$S3_{(\text{Water Productivity})}$; $R_{(\text{Risk})}$~$C1_{(\text{Reputation})}^{*}$; $R_{(\text{Risk})}$~$C4_{(\text{Audit})}^{*}$ have a positive coefficient, which entails that per every monetary unit invested in $S3_{(\text{Water Productivity})}$, $C1_{(\text{Reputation})}$, and $C4_{(\text{Audit})}^{*}$, $R_{(\text{Risk})}$ increases by the depicted coefficients of .059 for *S3*, .072 for *C1*, and .580 for *C4*.

Table 10. H2 Test for year 2014

	Regressions		
Relationship	*Estimate*	*Std. Err*	*z-value*
$R_{(\text{Risk})}$~$S1_{(\text{Energy Productivity})}$	-0.073	0.040	-1.842
$R_{(\text{Risk})}$~$S2_{(\text{Carbon Productivity})}$	-0.111	0.041	-2.733*
$R_{(\text{Risk})}$~$S3_{(\text{Water Productivity})}$	0.059	0.041	1.441
$R_{(\text{Risk})}$~$S4_{(\text{Waste Productivity})}$	-0.003	0.037	-0.076
$R_{(\text{Risk})}$~$C1_{(\text{Reputation})}$	0.072	0.036	1.973*
$R_{(\text{Risk})}$~$C2_{(\text{Equal Pay})}$	-0.113	0.040	-2.845*
$R_{(\text{Risk})}$~$C3_{(\text{Regulation})}$	-0.127	0.043	-2.960*
$R_{(\text{Risk})}$~$C4_{(\text{Audit})}$	0.580	0.042	13.861*
Fit Test			0.000*
X^2			0.000*
RMSEA			1.000*

**P-value* significant at an α of .05.

The results of year 2015 for the H2 Test (Table 11) are non-statistically significant in the eight tested relationships, with five negative and two positive coefficients. The negative coefficient entails that per every monetary unit invested in $S1_{(\text{Energy Productivity})}$, $S3_{(\text{Water Productivity})}$, $S4_{(\text{Waste Productivity})}$; $C1_{(\text{Reputation})}$ and $C3_{(\text{Regulation})}$; $R_{(\text{Risk})}$ decreases by the depicted coefficients of -.034 for *S1*, -.066 for *S3*, -.014 for *S4*, -.002 for *C1*, and -.067 for *C3*,. The remaining relationships: $R_{(\text{Risk})}$~$S2_{(\text{Carbon Productivity})}$ $R_{(\text{Risk})}$~$C2_{(\text{Equal-Pay})}$ $R_{(\text{Risk})}$~$C4_{(\text{Audit})}$ have a positive coefficient, that entails that per every monetary unit invested in $S2_{(\text{Carbon Productivity})}$, $C2_{(\text{Equal-Pay})}$, and $C4_{(\text{Audit})}$, $R_{(\text{Risk})}$ increases by the depicted coefficients of .029 for *S2*, .050 for *C2*, and .049 for *C4*.

Table 11. H2 Test for year 2015

	Regressions		
Relationship	*Estimate*	*Std. Err*	*z-value*
$R_{(\text{Risk})}$~$S1_{(\text{Energy Productivity})}$	-0.034	0.052	-0.649
$R_{(\text{Risk})}$~$S2_{(\text{Carbon Productivity})}$	0.029	0.053	0.544
$R_{(\text{Risk})}$~$S3_{(\text{Water Productivity})}$	-0.066	0.043	-1.534
$R_{(\text{Risk})}$~$S4_{(\text{Waste Productivity})}$	-0.014	0.042	-0.339
$R_{(\text{Risk})}$~$C1_{(\text{Reputation})}$	-0.002	0.041	-0.043
$R_{(\text{Risk})}$~$C2_{(\text{Equal Pay})}$	0.050	0.054	0.930
$R_{(\text{Risk})}$~$C3_{(\text{Regulation})}$	-0.067	0.053	-1.260
$R_{(\text{Risk})}$~$C4_{(\text{Audit})}$	0.049	0.049	1.003
Fit Test			0.000*
X^2			0.000*
RMSEA			1.000*

**P-value* significant at an α of .05.

The results of year 2016 for the H2 Test (Table 12) are non-statistically significant in the eight tested relationships with four positive and four positive coefficients. The negative coefficient entails that per every monetary unit invested in $S2_{(\text{Carbon Productivity})}$, $S3_{(\text{Water Productivity})}$, $S4_{(\text{Waste Productivity})}$, and $C2_{(\text{Equal-Pay})}$; $R_{(\text{Risk})}$ decreases by the depicted coefficients of -.082 for *S2*, -.036 for *S3*, -.006 for *S4*, -.104 for *C2*. The remaining relationships: $R_{(\text{Risk})}$~$S1_{(\text{Energy Productivity})}$; $R_{(\text{Risk})}$~$C1_{(\text{Reputation})}$; $R_{(\text{Risk})}$~$C3_{(\text{Regulation})}$; and $R_{(\text{Risk})}$~$C4_{(\text{Audit})}$ have a positive coefficient, that entails that per every monetary unit invested in $S1_{(\text{Energy Productivity})}$, $C1_{(\text{Reputation})}$, $C3_{(\text{Regulation})}$, and $C4_{(\text{Audit})}$, $R_{(\text{Risk})}$ increases by the depicted coefficients of .097 for *S1*, .033 for *C1*, .030 for *C3*, and .056 for *C4*.

Table 12. H2 Test for year 2016

	Regressions		
Relationship	*Estimate*	*Std. Err*	*z-value*
$R_{(\text{Risk})}$~$S1_{(\text{Energy Productivity})}$	0.097	0.051	1.906
$R_{(\text{Risk})}$~$S2_{(\text{Carbon Productivity})}$	-0.082	0.051	-1.614
$R_{(\text{Risk})}$~$S3_{(\text{Water Productivity})}$	-0.036	0.044	-0.813
$R_{(\text{Risk})}$~$S4_{(\text{Waste Productivity})}$	-0.006	0.041	-1.436
$R_{(\text{Risk})}$~$C1_{(\text{Reputation})}$	0.033	0.041	0.823
$R_{(\text{Risk})}$~$C2_{(\text{Equal Pay})}$	-0.104	0.054	-1.904
$R_{(\text{Risk})}$~$C3_{(\text{Regulation})}$	0.030	0.053	0.557
$R_{(\text{Risk})}$~$C4_{(\text{Audit})}$	0.056	0.050	1.104
Fit Test			0.000*
X^2			0.000*
RMSEA			1.000*

**P-value* significant at an α of .05

If taken individually by year, the specific results from each year are mixed. The only year with five variables with statistical significance from the eight specific variables was 2014; while, the remaining two do not achieve statistical significance. The coefficients from years 2014 and 2015 lean towards an overall negative relationship; while, year 2016 coefficients have no clear lean.

Collectively, both hypotheses offer mixed results between the relationships that they offer. The inconsistencies between the three years make the results inconclusive results to form an overall description for the availability of performance assertion. The description of these results will be portrayed in the following section.

VI. Discussion

The results for the first hypothesis regardless, that in two of the three years has no statistical significance, the following relationships are observed: the performance of the investment in Energy Productivity (S_1) offers a positive relationship for the three years. This means that investing in energy efficiency will most likely return a better operational performance for the corporations that invest in energy efficiency.

The other variable that, despite not achieving statistical significance in two of the three years, had a positive coefficient in the three years towards profit was Risk (R), which entails that venturing to operational risks has a benefit towards profit performance by having an overall positive relationship in the three years.

The Regulation Constraint (C_3), with no statistical significance in two of the three years had a constant negative coefficient for profit, which entails that governmental regulation reduces operational profit performance.

The remaining relationships had mixed results: Carbon Productivity (S_2), Waste Productivity (S_4), Reputation (C_1), and Audit (C_4) lean towards a positive performance, which will most likely provide basis for a beneficial relationship in their operational profit results.

The Water Productivity (S_3), and Equal Pay (C_2) lean towards a negative performance, which will likely be the basis for worse results in profit performance if investment in these constraints is done.

About the second hypothesis, an important remark:

Waste Productivity (S_4) had a negative relationship towards Risk (R), although it had no statistical significance in the three years, it is the only relationship that offers a constant negative relationship decreasing Risk. Audit (C_4) had a positive relationship towards Risk (R), which entails that allowing for more auditing processes will increase the Risk for their operational performance.

The remaining relationships had mixed results: Energy Productivity (S_1), Carbon Productivity (S_2), Water Productivity (S_3), Equal Pay (C_2), had a negative relationship in two of the three years leaning towards a negative relationship, which could entail that Risk will be reduced by the increase of such constraints.

Reputation (C_1) and Regulation Constraint (C_3) had a positive relationship entailing that such effect will increase operational risks.

Overall, the results explain, as expected, the existent relationships between the sustainable and socially responsible variables towards operational profit and operational risk. Therefore, the obtained results offer a basis for further research at each individual variable. Furthermore, to establish more precise relationships, hopefully, the entirety of the sample of corporations will answer the NGR questionnaire, leaving less blanks, and with the possibility of achieving statistical significance in more years. Although it is relevant to point out that in this study, there were 611 different global corporations that show interest in the Eco-efficiency relationships.

VII. Conclusions

The conclusions that arise from both the Theoretical Framework, and the statistical results are as stated by the Stakeholder Theory and by Sinkin et al.'s research in that a corporation's performance must be in accordance to fulfilling eco-efficiency goals to improve their operational profitability performance (Waddock & Graves, 1997; Sinkin et al., 2008). Although, the statistical results are mixed, the following statements must be taken into consideration.

Despite having a non-definite overall conclusion, the results show that investments done in energy productivity have a positive relationship towards operational profit. Furthermore, the carbon and waste productivity relationships with regards to operational profit lean to a positive relationship entailing that these three relationships might provide for better operational profits in the analyzed corporations. The four sustainable deemed variables (energy, carbon, water, and waste productivities) lean towards a negative relationship towards operational risk, evidencing that operational risk might be reduced as a benefit of the investment on these variables.

These stated relationships contribute to corporations that seek to enlarge their eco-efficiency ratings to invest in the variables that most likely will improve their operational profits, and on those that will diminish the impact of operational risk.

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CHAPTER 6

CONCLUSIONS[5]

[5] The references for this section will be at the General Bibliography Section following this Chapter.

I. Main Contributions from Theoretical Frameworks

The Theoretical Frameworks from the four papers offer a general definition of the terms deemed relevant to the topic of Sustainability and Corporate Social Responsibility. Currently, the two terms are very popular in the consciousness of businesspeople and societies. Although there is a commonly accepted consensus on the definition for Sustainability, which is the definition adopted by the United Nations regarding meeting today's needs with no prejudice to future generations (United Nations, 1993); it is not the same case for Corporate Social Responsibility (CSR). Here it's a depiction of the best compilation of the literature at hand.

Sustainability is a term that is linked directly to environmental means of a corporation to provide ecological means that allows entities to preserve natural resources. The World Commission on Environment and Development on its 1987 Report, defined Sustainability as "meeting the needs of the present (generation) without compromising the ability of future generations to meet theirs" (The World Commission on Environment and Development, 1987). The United Nations have also adopted the same meaning on its 1992 Conference on the Environment and Development (United Nations, 1993). Ever since, environmental efforts have been considered necessary to adopt the lesser usage of pollutants, favor recycling, and efficiency in the usage of natural resources. From such standpoint, corporations have the need to improve the environment, or preventing it from further damage. Although, there are plenty of cases where corporations, in their behavior have disrespected environmental policies, which means that there is not an entire compliance of such policies. Forcing Governments throughout the globe to enforce new regulations towards achieving such goals (Hirsch, 2010).

Businesses Academia has difficulties settling in on a generally accepted definition for CSR, here is shown the one with a more general acceptance in the community, it is a term related to ethical behavior performed by corporations. It has been defined as: “the continuing commitment by business to behaving ethically and contributing to economic development while improving the quality of life of their workforce and their families as well as of the community and society at large” (Sims, 2003).

Although, there is no consensus, the business community has its discrepancies mainly, on which factors shall be included, and to what extent they must be taken into action for the corporation involved to be considered Socially Responsible. For some economists, such as Albert Carr, the only Social Responsibility that a corporation has is to obey the law. (Carr, 1996) On the other hand, some scholars argue that the business of businesses is not entirely about money, must be also about responsibility; it should be about public good, not private greed (Roddick, 2000). Novak has defined the economic Social Responsibility under seven constraints: a) satisfy customers with goods and services of real value; b) earn a fair return on the funds entrusted to the corporation by its investors; c) create new wealth; d) create new jobs; e) empower upward mobility; f) promote innovation; diversify economic interests (Novak, 1996). Furthermore; ethical duties entail being moral, doing what is right, just, and fair; respecting peoples’ moral rights; and avoiding harm or social injury as well as preventing harm caused by others (Smith & Quelch, 1993).

The Stakeholder Theory is considered as the pillar for CSR, this theory establishes that if corporations fulfill their stakeholders' needs is a method to guarantee their success as a business (Waddock & Graves, 1997). Based on other researchers' work such as Savitz' triple bottom line (Savitz & Weber, 2006), Ibrahim et al.'s research regarding the necessity of a straight relationship with their customers (Ibrahim et al., 2003), and that the recognition-based rationale has a linkage with the profit-based rationale (Schaltegger & Horisch, 2017). Based on these previous research is that the present thesis points out the relevance of Sustainability and Social Responsibility Performance in terms of operational profitability results and the possibility of stability and reduction of potential operational risk's adverse effects.

Three previous research establish that the standards of Sustainability and Social Responsibility are accounting-based measures rather than market-based (McGuire et al., 1988; Margolis et al., 2007; Orlitzky, Schmidt, & Rynes, 2003). Therefore, this research in comparison to others shows the relationship and benefits of Sustainability and ethical behavior based on the operational performance rather than focusing on financial markets' performance of corporations.

The presence of time effects is shown by other researchers' previous work that externalities might occur, affecting the operational and financial results from corporations in a given period (Mill, 2006; Van Bellegem & Von Sachs, 2004; Meuse & Dai, 2013). From such statements is the basis for testing such time performance to establish if the operational profitability was impacted in any way by time on the three clusters.

The Stakeholders Theory was the foundation for the fourth paper to attempt the benefits of eco-efficiency constraints relationship towards improving the operational profitability and performance (Waddock & Graves, 1997). Such Theory states the need to be ecologically and ethically fit, unfortunately such relationship could not be established at least with the Index at hand.

II. Main Contributions from the Statistical Analysis.

The conclusions that arise from both the results from the hypotheses in the first three papers is that having a Sustainable and Socially Responsible performance allows corporations to have significantly better operational results and stability. The stability of Sustainable and Socially Responsible corporations allows them to perform better in operational terms. Finally, good business ethics has evidence to be the best choice for corporate performance.

a. EBITDA Profit Margin Analysis.

The three different sectors being analyzed had a much better result from the SSRC Group against its Non-SSRC counterparts. Although when the Analysis was taken to the Longitudinal Multilevel Analysis, the Automobile and Components Cluster had no statistical significance, since its very much related within its capabilities of production, and the production means are the same labor, materials, and relatively the same components.

b. EBIT Profit Margin Analysis.

The three different sectors being analyzed had a much better result from the SSRC Group against its Non-SSRC counterparts. The three different sectors had statistical significance at this operational profit margin, which allows for such constraint to be accepted throughout the three analyzed sectors.

c. Pretax Profit Margin Analysis.

The three different sectors being analyzed had a much better result from the SSRC Group against its Non-SSRC counterparts. At this level the SSRC from the three sectors had a much better result on the Longitudinal Multilevel Analysis.

d. Net Profit Margin Analysis.

The Net Profit Margin is the bottom-line for many investors, on the three different sectors the SSRC had an overwhelming better result than its counterparts. The Longitudinal Multilevel proved to have statistical significance in the mean.

The four margins on the three analyzed sectors had no externalities or time positive/negative effects upon their performance (Mill, 2006; Van Bellegem & Von Sachs, 2004; Meuse & Dai, 2013). This situation allows to ascertain that the operational profitability allows for this thesis to validate the hypothesis that the relationship between SSRC recognition benefits their operational profitability performance.

The results corroborate the Stakeholder Theory, and the previous research that abiding by sustainability and ethical constraints the operational level benefit from such implementation (Waddock & Graves, 1997; Savitz & Weber, 2006; Ibrahim et al., 2003; Schaltegger & Horisch, 2017). The operational profitability is being researched as it was pointed that these constraints are related to the accounting-based analysis rather than the financial market-based analysis based (McGuire et al., 1988; Margolis et al., 2007; Orlitzky, Schmidt, & Rynes, 2003).

e. Structural Equation Modeling.

This technique was employed to analyze the relationship between the eco-efficiency ratings and the operational management of risk and the plausibility of risk reduction. Unfortunately, such relationship was not entirely successful to establish, at least from the Newsweek Green Rankings (Newsweek, 2014-16). However, the results were promising in the establishment of new opportunities to explore the efficiency of Energy due to its foreseen benefits to the operational management. The obtained results corroborate the Stakeholder Theory and Sinkin et al.'s research that eco-efficiency's management allows to improve economic benefits for the corporations that implement them (Waddock & Graves, 1997; Sinkin et al., 2008).

III. Proposals for future research.

The first proposal for future research is the necessity to ascertain the possibilities in performance with such constraints by country interaction to observe if it is relevant to observe such interaction. As stated on the papers, there is a difference in the accounting principles employed by the U.S.A. and the remaining countries. The U.S.A. uses the GAAP, while most of the remaining countries use the IFRS this opens the opportunity to study such interaction to analyze if there is a substantial difference derived from this difference in implementation.

The second proposal arises from the promising results from the SEM analysis by providing a path to open the opportunity to analyze a better Index, or establish the considerations for a better transversal study for the same companies or a different sample of enterprises. This proposal is necessary to further study the relationship between operational management of profit and risk with regards with improving the ethical and ecological behavior of corporations.

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Appendix Section

Dow Jones Sustainability Sectors and countries represented

Automobile and Components	
France	3
Germany	1
Japan	5
Korea	5
U.K.	1
Total	15
Banks	
Australia	5
Brazil	3
Canada	1
Colombia	1
France	2
Italy	1
Korea	2
Netherlands	1
South Africa	1
Spain	2
Sweden	1
Thailand	1
U.K.	4
U.S.A.	2
Total	27
Capital Goods	
Brazil	1
Finland	2
France	6
Germany	2
Japan	6
Korea	2
Netherlands	1
Spain	2
Sweden	2
U.K.	3
U.S.A.	5
Total	32

CONTINUES FROM PREVIOUS PAGE:

Commercial and Professional Services	
Australia	1
China	1
Denmark	1
Netherlands	1
Switzerland	1
U.K.	1
U.S.A.	1
Total	7
Consumer Durables and Apparel	
Canada	1
France	1
Germany	1
Japan	3
Korea	2
Sweden	1
U.K.	1
Total	10
Consumer Services	
Australia	1
France	1
Germany	1
Japan	1
Korea	1
U.K.	3
Total	8
Diversified Financials	
Colombia	1
Germany	2
Japan	2
Korea	2
Switzerland	2
U.K.	2
U.S.A.	2
Total	13

CONTINUES FROM PREVIOUS PAGE:

Energy	
Australia	2
Canada	2
Finland	1
France	3
Hungary	1
Japan	1
Korea	1
Netherlands	1
Portugal	1
Spain	1
Thailand	2
U.K.	1
Total	17
Food and Staples Retailing	
Australia	1
Germany	1
Japan	1
Netherlands	1
Total	4
Food and Beverages	
Colombia	1
France	1
Japan	1
Spain	1
Switzerland	2
U.S.A.	5
Total	11
Health Care Equipment	
Denmark	1
France	1
Japan	1
South Africa	2
Switzerland	1
U.K.	1
U.S.A.	6
Total	13

CONTINUES FROM PREVIOUS PAGE:

Household and Personal Products	
Germany	1
Japan	1
Netherlands	1
U.K.	2
Total	5
Insurance	
Australia	1
France	1
Germany	2
Japan	3
Korea	3
Netherlands	2
Norway	1
Switzerland	2
U.K.	2
Total	17
Materials	
Australia	2
Brazil	1
Canada	2
Colombia	2
Denmark	1
Germany	4
Korea	1
Netherlands	2
Norway	1
Switzerland	1
Thailand	2
U.K.	2
U.S.A.	5
Total	26

CONTINUES FROM PREVIOUS PAGE:

Media	
Belgium	1
France	1
Netherlands	2
Sweden	1
U.K.	3
U.S.A.	1
Total	9
Pharmaceuticals	
Denmark	1
France	1
Germany	1
Switzerland	3
U.K.	2
U.S.A.	5
Total	13
Real Estate	
Australia	6
France	3
Singapore	2
Sweden	1
U.K.	4
U.S.A.	2
Total	18
Retailing	
Canada	1
Chile	1
South Africa	1
Spain	1
Sweden	1
U.K.	2
U.S.A.	3
Total	10
Semiconductors and Equipment	
Germany	1
Taiwan	3
Total	4

CONTINUES FROM PREVIOUS PAGE:

Software and Services	
Brazil	1
France	1
Germany	1
India	3
Japan	1
Spain	2
U.S.A.	6
Total	15
Technology Hardware and Equipment	
Finland	1
Japan	3
Korea	3
Taiwan	2
U.S.A.	3
Total	12
Telecommunication Services	
Canada	1
Germany	1
Italy	1
Korea	2
Netherlands	1
Spain	1
Switzerland	1
Taiwan	1
Total	9
Transportation	
Australia	1
Canada	1
Chile	1
France	2
Germany	1
Italy	1
Netherlands	1
Spain	1
U.K.	1
U.S.A.	1
Total	11

CONTINUES FROM PREVIOUS PAGE:

Utilities	
Brazil	1
France	3
Germany	1
Italy	3
Portugal	1
Spain	6
U.K.	1
Total	16
INDEX TOTAL	***354***

Dow Jones Sustainability Index

Descriptive Statistics of the Net Profit margin from every country in the overall 118 countries represented

Country	*Corps.*	*Mean*	*S.D.*	*Kurtosis*	*E. Kurtosis*
ARE	109	15.77%	25.03%	2.6040	0.2130
ARG	76	5.73%	16.37%	5.6830	0.2560
AUS	1,832	4.66%	32.26%	1.7860	0.0760
AUT	90	5.46%	18.67%	12.0320	0.2410
BEL	146	14.59%	29.34%	1.3020	0.1980
BEN	1	19.11%	5.45%	- 0.2560	2.0000
BFA	1	13.04%	7.04%	3.5550	2.6190
BGD	255	11.54%	14.69%	10.8450	0.1530
BGR	77	3.84%	26.10%	3.5090	0.2830
BHR	36	19.14%	23.17%	4.7680	0.3680
BHS	3	34.73%	37.58%	- 1.2110	1.3340
BLZ	3	-6.19%	52.13%	- 1.7080	1.3340
BMU	631	3.80%	29.93%	2.0380	0.0960
BRA	363	6.33%	23.54%	4.6230	0.1260
BRB	1	3.84%	2.22%	3.2430	2.0000
BWA	21	21.70%	23.40%	0.3310	0.4810
CHE	271	10.20%	23.87%	5.6410	0.1430
CHL	194	13.96%	25.39%	3.5300	0.1680
CHN	2,241	8.64%	14.07%	11.0340	0.0410
CIV	19	10.48%	10.94%	0.1430	0.6080
CMR	1	-7.15%	10.00%	- 1.7080	1.3340
COL	48	12.09%	15.38%	5.8490	0.3150
CUW	4	2.35%	11.81%	2.4670	1.0910
CYM	997	5.22%	25.00%	3.9840	0.0820
CYP	95	-6.36%	28.61%	2.4850	0.2760
CZE	18	12.54%	11.03%	- 0.4360	0.5780
DEU	811	3.58%	20.73%	7.2450	0.0860
DNK	184	3.66%	25.00%	4.5450	0.1780
ECU	6	23.83%	8.13%	- 0.3010	1.0380
EGY	186	8.87%	21.91%	4.6530	0.1740
ESP	187	4.71%	25.30%	3.9000	0.1850
EST	16	7.01%	14.18%	3.1870	0.5660
FIN	151	4.41%	15.65%	8.9350	0.1970
FLK	2	3.84%	2.88%	3.2430	2.0000
FRA	728	4.03%	20.70%	7.3090	0.0900
FRO	4	3.38%	21.65%	4.4650	1.0140
GAB	1	7.53%	6.77%	- 0.5750	2.0000
GBR	1,593	13.88%	35.62%	0.9850	0.0620
GEO	1	27.95%	1.64%	-	-

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GGY	76	43.55%	45.95%	0.0430	0.3560
GHA	21	9.97%	17.11%	0.4320	0.4950
GIB	6	-1.19%	19.69%	7.5190	1.1210
GRC	227	-8.21%	24.33%	2.7190	0.1570
HKG	268	21.10%	32.69%	0.9340	0.1510
HRV	86	-0.42%	20.81%	6.2270	0.2490
HUN	30	3.21%	15.57%	6.5290	0.4610
IDN	493	7.34%	19.41%	6.3040	0.1040
IMN	45	11.89%	40.16%	0.5460	0.4370
IND	2,697	3.53%	19.73%	7.5520	0.0390
IRL	67	6.13%	28.28%	2.5180	0.3410
ISL	22	12.16%	13.76%	1.8910	0.5260
ISR	490	5.24%	23.01%	4.6320	0.1130
ITA	337	-0.50%	18.70%	6.5120	0.1360
JAM	32	14.51%	22.10%	5.6740	0.4250
JEY	83	12.87%	33.92%	1.1570	0.3060
JOR	212	5.49%	27.16%	2.6980	0.1650
JPN	2,871	3.40%	9.63%	26.2820	0.0390
KAZ	30	7.80%	23.57%	5.4010	0.4370
KEN	52	12.66%	22.42%	4.8170	0.3010
KOR	1,369	0.51%	16.14%	9.7540	0.0620
KWT	186	17.66%	31.17%	1.7940	0.1740
LBN	8	16.29%	8.01%	6.3900	0.7090
LBR	1	4.75%	4.05%	-	-
LIE	2	13.45%	7.79%	- 1.0040	1.3340
LKA	263	12.17%	22.91%	3.9520	0.1380
LTU	38	3.61%	16.46%	8.6550	0.3790
LUX	73	16.94%	34.82%	0.7250	0.3160
LVA	28	-1.15%	20.31%	8.6450	0.4100
MAR	76	10.66%	12.76%	3.6680	0.2880
MCO	3	23.51%	32.47%	- 1.0750	1.1540
MEX	143	10.03%	19.97%	5.2940	0.1990
MHL	7	-15.20%	36.02%	- 0.8210	1.0910
MLT	25	12.86%	21.52%	3.0360	0.4810
MUS	50	14.73%	24.95%	3.1030	0.3540
MWI	6	22.31%	17.27%	- 1.1210	0.7780
MYS	895	6.29%	20.63%	6.0790	0.0730
NAM	8	22.05%	22.30%	0.6040	0.7240
NER	1	29.39%	2.73%	- 2.6990	2.0000
NGA	144	3.71%	20.59%	5.3950	0.1940
NLD	180	6.19%	23.44%	5.9600	0.1920

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NOR	241	2.76%	25.76%	4.2720	0.1680
NZL	166	6.99%	28.79%	2.5890	0.2050
OMN	91	15.16%	22.48%	4.0270	0.2320
PAK	402	6.22%	21.77%	5.7040	0.1130
PAN	6	14.54%	16.57%	- 0.5930	0.8330
PER	104	9.14%	18.38%	6.9070	0.2180
PHL	243	15.11%	23.51%	3.2580	0.1560
PNG	7	8.01%	32.27%	4.9080	1.0380
POL	656	3.82%	21.28%	6.4700	0.0960
PRT	53	0.97%	17.17%	9.8980	0.3190
PSE	30	9.68%	23.44%	2.2750	0.4040
QAT	41	33.52%	28.53%	2.7020	0.3400
ROU	145	3.74%	25.53%	4.2160	0.2140
RUS	275	4.24%	18.23%	8.7560	0.1490
SAU	165	14.66%	24.80%	1.8530	0.1780
SDN	2	28.69%	26.34%	- 0.9170	1.3340
SEN	4	9.68%	7.99%	-	-
SGP	690	8.09%	24.25%	3.3230	0.0890
SRB	15	5.88%	21.24%	5.0110	0.6040
SVK	14	6.23%	18.96%	13.9090	0.5990
SVN	32	-3.33%	19.98%	8.4150	0.3970
SWE	638	1.56%	27.86%	3.5690	0.1130
TGO	1	10.98%	6.00%	- 2.9640	2.0000
THA	661	9.02%	21.46%	6.3270	0.0910
TTO	18	18.89%	18.50%	2.2660	0.5030
TUN	70	11.53%	21.08%	6.6470	0.3020
TUR	393	6.60%	23.62%	4.7050	0.1170
TWN	1,634	3.38%	17.45%	8.3400	0.0540
TZA	9	21.84%	7.22%	0.0870	0.7410
UGA	7	15.46%	14.64%	0.3920	0.7680
UKR	32	-1.62%	23.74%	2.7530	0.4330
USA	3,058	8.73%	28.18%	0.9850	0.0620
VEN	24	17.64%	17.99%	- 0.3290	0.5950
VGB	67	10.56%	35.57%	0.7800	0.4270
VNM	473	7.43%	16.16%	11.2810	0.1080
ZAF	347	10.66%	23.94%	3.5260	0.1300
ZMB	18	14.24%	17.09%	3.9280	0.5450
ZWE	38	4.67%	18.07%	5.2150	0.3600
Total	***33,924***	***6.13%***	***21.90%***	***5.9980***	***0.0130***

Obtained from the Compustat Global Database and results obtained from SPSS